



SCHOOL OF BUSINESS

ISSN No: 2582-4236

SKIPS Anveshan

(A Journal of Management Studies)

Volume 5 | Issue 1 | June 2024



ISSN No: 2582-4236

SKIPS Anveshan

(A Journal of Management Studies)

INDEX

Sr. No.	Title and Author	Pages No.
1	Motivation of quality of integrated reporting of listed companies in Colombo stock exchange <i>by E A L ISURINI and D C P Ranaweera</i>	1-27
2	Localizing Strategies for a Wood Coating Product: A Case of Sri Lankan Multi-National Company <i>by Venuka Batagoda, Thirandi Dharmawardhana, Eranga Dias, Poornima Gamage, Sandun Weerasekera</i>	28-48
3	Exploring international partnership strategy for the logistics industry: The case of ABC <i>by Nethmi Prabashani, Sewmi Kulathilake, Haritha Jayaweera, Poornima Gamage and Sandun Weerasekera</i>	49-63
4	The impact of intellectual capital on financial performance of public listed material companies in Sri Lanka <i>by R M T W Rupasena and D C P Ranaweera</i>	64-96
5	A Comparative Analysis of Broadband Brand Engagement in Gujarat: A Consumer Perspective <i>by Malhar Prajapati, Lalit Sangtanim, Milind Das, Aryan Chunara and Bhumit Hadia</i>	97-103

Motivation of quality of integrated reporting of listed companies in Colombo stock exchange

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Abstract

This study aims to identify the motivating factors of quality of integrated reporting and impact of those factors on quality of integrated reporting of listed companies in Colombo Stock Exchange in Sri Lanka. The disclosure level of integrated report scores was measured base on the six capitals, guiding principles and content elements of international integrated reporting framework. This study used both primary data and secondary data of 74 listed companies. Primary data used to identify motivating factors and secondary data use to identify the disclosure level of the companies. Disclosure level of reporting was analyzed base on the checklist of international integrated reporting framework. Descriptive analysis and regression analysis were used to analyze impact of motivation on disclosure level using SPSS analytical software.

The study discovered there is a significant impact of motivating factors on quality of integrated reporting of listed companies in Sri Lanka. Further, researcher concluded that reputation and brand management, increased access to capital and shareholder value, risk management, improve government relationship and transparent communication are the motivation of integrated reporting disclosure. This study found that improve integrated thinking and decreased information asymmetry as the motivating factors by interviews. This finding indicates that more insight on disclosure level of integrated reporting creates more benefits to both company and stakeholders. Hence, this study recommends to compliance with integrated reporting to derived more benefits to the companies.

Key Words: *Quality of Integrated Reporting, Motivating Factors, Shareholder Theory, Stakeholder Theory, Agency Theory*

1. Introduction

1.1 Background of the Study

In the business world, stakeholders expected beyond the profit as disclose of non-financial information, corporate responsibility and environmental-friendly through the businesses. As the result of that companies started voluntary disclosure of non-financial information and began Corporate Social Responsibilities (CSR) projects to attract loyalty of stakeholder with giving value to society by social responsibility. Meanwhile a new approach to corporate reporting called “Integrated Reporting” has been suggested by International Integrated Reporting Council in 2013.

Integrated Reporting is a process which communicates the organization's unique value creation story to the stakeholders who have diverse interest upon the organization (IIRF, 2013). And also, it is integration of CSR and sustainability into the annual reports using financial and non-financial data over short, medium and long term. Further, integrated reporting is a corporate reporting paradigm which combines financial information, environment information and social information (triple bottom line) together to fulfill the needs of stakeholders.

This is a tool for sustainable business development through creating value among the whole business process. It mean company takes six capitals (financial, capital, manufactured capital, intellectual capital, human capital, social and relationship capital and natural capital) as the inputs then process with the guiding principles (strategic focus and future orientation, connectivity of information, stakeholder relationships, materiality, conciseness, reliability and completeness, consistency and comparability) and content elements (organizational overview and external environment, governance, business model, risk and opportunities, strategy and resource allocation, performance, outlook, basis of presentation) to create value which presents value to loyal stakeholders and to the society with doing social responsibility and transparent report with more discourses and accuracy.

In today world, most of companies get the benefits of integrated reporting by practicing this concept together with integrated thinking, integrated strategy and integrated performing. Hence, this overall process accumulates all sources surrounding the business together and helps to remove barriers with gathering all parties as the business family, then create high value with reliability, completeness, consistency and comparability. Accordingly, this helps companies to win business world because this process helps for more value creation to increase profits and win competition and social barriers together with nature and society. And also, integrated reports are also considered as higher quality reports that describe the connections between the social, environmental and economic dimensions of a company (Dilling & Caykoylu, 2019). Further most of stakeholders of the companies wish better reports to know about financial and non-financial information of the company for get their decisions about the companies and their investments. Because of that the quality of integrated reporting is more important for the companies. But, preparing high quality integrated reports is the big challenge for the companies (Dude, 2017; Iredele, 2019).

The concept of integrated reporting is new concept for the Sri Lankan companies. The previous researcher, Nuradhi Kalpani found that "the growing trend of integrated reporting adoption by listed companies in Sri Lanka on the move beyond an early adoption stage to a development stage". Most of Sri Lankan companies are engaged with integrated reporting concept because of the requirement of investors and stakeholders of the companies (Jayasiri, 2020). Hence, the Sri Lankan companies are always trying to provide quality reports to their stakeholders.

When considering about prior researches in Sri Lanka regarding with integrated reporting concept, most of researchers are focused integrated reporting adoption in Sri Lanka, integrated reporting and financial performance and also factors affecting to integrated reporting quality (Cooray, Gunarathne, & Senaratne, 2020), (Herath, Gunarathne, Cooray, & Samudrage, 2019). But there is a special matter that we want to discuss, why the companies are speedily engaged with integrated reporting and why companies are mostly trying to provide high quality reports. In that situation, it is significant to identify about the motivations for quality of integrated reporting in Sri Lankan companies. Hence, this survey discovers the problem as;

1.2 Problem Statement

The concept of integrated reporting is new concept for the Sri Lankan companies. The previous researcher, Nuradhi Kalpani found that the growing trend of integrated reporting adoption by listed companies in Sri Lanka on the move beyond an early adoption stage to a development stage. And also, most of Sri Lankan companies are engaged with integrated reporting concept because of the requirement of investors and stakeholders of the companies (Jayasiri, 2020). Hence, the Sri Lankan companies are always trying to provide quality reports to their stakeholders.

When considering about prior researches in Sri Lanka regarding with integrated reporting concept, most of researchers are focused integrated reporting adoption in Sri Lanka, integrated reporting and financial performance and also factors affecting to integrated reporting quality (Cooray, Gunarathne, & Senaratne, 2020), (Herath, Gunarathne, Cooray, & Samudrage, 2019). But there is a special matter that we want to discuss, why the companies are speedily engaged with integrated reporting and why companies are mostly trying to provide high quality reports. In that situation, it is significant to identify about the motivations for quality of integrated reporting in Sri Lankan companies. Hence, this survey discovers the problem as;

“What are the motivations for quality of integrated reporting and what extent to those motivations are affect to quality of integrated reporting of listed companies in Colombo Stock Exchange?”

1.3 Research Questions

According to the main research problem, the following sub question were addressed.

- 1) What are the factors motivating to disclose integrated reporting of listed companies in Sri Lanka?
- 2) What is the level of integrated reporting of listed companies in Sri Lanka?
- 3) How do the factors (reputation and brand management, increased access to capital and shareholder value, risk management, improve government relationships and transparent communication) influence on integrated reporting of listed companies in Sri Lanka?

The aim of this study is to identify the motivations of quality of integrated reporting of listed companies in Colombo stock exchange in Sri Lanka. Today, integrated reporting is the trending and new concept among the Sri Lankan companies and companies try to provide high-quality integrated reports for their shareholders and other stakeholders. Hence, this study is more important to identify the motivations for providing quality integrated reports and to identify about the benefits that can be received from engaging integrated reporting and providing quality integrated reports.

1.4 Significance of the Study

The aim of this study is to identify the motivations of quality of integrated reporting of listed companies in Colombo stock exchange in Sri Lanka. Today, integrated reporting is the trending and new concept among the Sri Lankan companies and companies try to provide high-quality integrated reports for their shareholders and other stakeholders. Hence, this study is more important to identify the motivations for providing quality integrated reports and to identify about the benefits that can be received from engaging integrated reporting and providing quality integrated reports.

1.5 Empirical Review

According to the international Integrated Reporting council, Integrated Reporting has defined as “corporate reporting should keep the pace with the developing economic reality and address the needs of a wide stakeholder audience by providing financial and non-financial information having short- and long-term focus” (IIRC, 2013) . According to the (Bhasin, 2017), Integrated Reporting explains how all resources create value by communicating a clear concise organization strategy, prospects, plans, reports and story over short, medium and long term. The more disclosures of information most significant to decision makers of the organization. As well as Integrated Reporting facilitates to financial and non-financial information to one piece of paper (Bhasin, 2017; Hoque, 2017).

The prior researchers Kin-Wai Lee and Gillian Hian-Heng Yeo said that when integrated reporting enhances the quality of information that provide by the companies to their investors, it will be caused to derived economic benefits for the companies (Lee & Yeo, 2015). According to Desi Adhariani, Charl De Villiers (Adhariani & Villiers, 2018), the motivations for integrated reporting can be identified as under the two perceptions as prepares’ perception and users’ perception for the integrated reporting. According to the prior researchers of Belverd E. and Mark Anthony Camilleri (Belverd E, 2016), shareholders, regulators and other stakeholders demand more non-financial information from

the and companies are required to disclose more information regarding governance, social and environmental issues and also sustainability in their annual reports (Belverd E, 2016; Camilleri, 2018).

The prior researchers Athanasios Pavlopoulos, Chris Magnis and George Emmanuel (Athanasios Pavlopoulos, 2017), said that the companies that have higher integrated reporting quality had shown lower agency cost than the companies with lower level of integrated reporting quality (Athanasios Pavlopoulos, 2017). Hence, the integrated reporting disclosure helps to reduce agency problems of the companies and to enhance the quality of information among their stockholders.

2 Methods

2.1 Operationalization

Operationalization is the process of connecting concept of the research with the variables. According to the conceptual framework there are five main indicators to identify the motivations for quality of integrated reporting. In this study motivational factors act as the independent variable and quality of integrated reporting act as the dependent variable. And to identify the disclosure level of the integrated reporting this study follows 21 rules under three main indicators that introduced by Integrated Reporting Framework.

2.2 Population and Sampling

The population of this dissertation consist with 289 public listed companies on the Colombo Stock Exchange (CSE) under 19 sectors as at 31 August 2022. According to the Integrated Reporting Council of Sri Lanka, 84 companies are engaged with integrated reporting concept among 298 of listed companies till the year of 2018 (IRCSSL, 2021). There is no enough evidence to confirm the number of listed companies that engaged with integrated reporting in 2021 as 84 companies. Hence, the researcher has been checked the annual reports of all listed companies and identify the companies which are practicing integrated reporting in present. According to that, 80 companies are practicing integrated reporting in 2022. Hence, the researcher has identified 80 listed companies as the sample of this study.

2.3 Primary Data Collection

This study has been used primary data collection method to identify the motivational factors. Primary data are the data that researchers are collected directly from main sources. Interviews, surveys and questionnaire, experiments and observations are the main method that researchers are used as the primary data collection methods. In this study, survey method was appropriate to collect data to identify the motivation factors because the nature of the constructs presented in the theoretical method. Specially, to get the ideas regarding adopting integrated reporting for reporting practices of the companies and to identify the why they provide quality reports, the research had conducted the interviews with companies via the telephone discussion. Ten companies that provide best integrated reports were selected for the interview based on the CMA annual performance evaluation of best integrated reports in Sri Lanka 2020.

2.4 Method of Data Analysis

This study has used quantitative data analysis and data has analyzed using Statistical Package of Social Science (SPSS) 22.0 version. In this investigation regression analysis was basically used to evaluate the motivation factors for quality of integrated reporting of listed companies of Colombo Stock Exchange.

2.5 Hypothesis of the Study

In order to assess the recent status of quality of integrated reporting and what are the motivations that are affected to quality of integrated reporting in Sri Lanka context, study must conduct and test for statistical test to evaluate current findings. According to Miji Kim found that reputation and brand management, increased access to capital and shareholder value, risk management, government relationships and transparent communication are the motivations of CSR disclosure. Hence, according to the conceptual framework of the study, following hypothesis created to identify the impact of those motivations on quality of integrated reporting.

H1: There is a significant impact of reputation and brand management on quality of integrated reporting.

H2: There is a significant impact of increased access to capital and shareholder value on quality of integrated reporting.

H3: There is a significant impact of risk management on quality of integrated reporting.

H4: There is a significant impact of improve government relationship on quality of integrated reporting.

H5: There is a significant impact of transparent communication on quality of integrated reporting.

H6: There is a significant impact of motivations under the economic and ethical consideration on quality of integrated reporting.

3. Results

3.1 Reliability

The analysis of reliability is an analysis that use to measure the reliability of instruments and internal consistency of the instruments. In this study reliability analysis was used to measure the reliability of instruments that use to identify the motivations of quality of integrated reporting of listed companies of CSE. The reliability of instruments was measured using Conbranch's Alpha Value. As per the Table 3.1, Alpha value of all motivations are greater than 0.7. Hence it can be concluded that all items that used to identify motivations of quality of integrated reporting are reliable, which suggest that the internal reliability of each item was satisfactory.

3.2 Data Presentation for General Information of Reporting

To identify the motivations of quality of integrated reporting, the data has collected from listed companies of CSE. The firstly, researcher has identified about two main points. they are,

- The companies are currently adopting integrated reporting or not.
- The decision to adopt integrated reporting is voluntary decision or not.

According to the Table 3.2, out of 74 companies all of respondents are currently adopting integrated reporting as a percentage of 100%. The Table 3.3 shows that, out of 74 companies all of respondents are adopting integrated reporting as a voluntary decision of the companies as a percentage of 100%. Hence, the all of companies are practicing integrated reporting, because of their voluntary decisions.

3.3 Data Presentation for Motivating Factors

The data relating to motivating factors of integrated reporting has shown using descriptive table. The table 3.4 shows the mean value and standard deviation of motivating factors under the economic and ethical consideration. According to table, reputation and brand management has higher mean value as 4.1892 than the other motivating factors. And also, government relationship has lowest mean value as 3.9932.

3.4 Quality of Integrated Reports

To achieve the objective of identifying the level of integrated reporting of listed companies, researcher used the data of annual reports in the year of 2020/2021 of selected companies. The quality of integrated reports measured by using 21 rules under the six capital, seven guiding principles and eight content elements that issued by integrated reporting framework. The quality of integrated reporting was measured using the analysis that developed by the prior researcher of Appiagai and Djajadikerta, (2016). According to that "0" assign for no disclosure, "1" assign for general disclosure, "2" assign for specific disclosure and "3" assign for detailed disclosure. Finally, quality of reports identified as a percentage. The table 3.4 and figure 3.1 pie chart show that the total quality as 100% of integrated reports consists of 38% quality of content elements, 33% quality of guiding principles and 29% quality capital.

According to annual reports of selected companies in year of 2020/2021, the researcher has identified quality level of six capitals, seven guiding principles and eight content elements. As per the above Table 3.5 and bar chart, can be identified the total disclosure level of the selected companies in year of 2020/2021. The disclosure level of content elements is 24.99% and the 13.11% is not-disclosure. The disclosure level of content elements is 17.67% and the disclosure level of capitals is 23.16%. And also, 15.66% of guiding principle and 5.41% of capitals is not disclosure in year of 2020/2021. According to the Table 3.6 and pie-chart, total quality level of integrated reports of listed companies in year of 2020/2021, can be identified as 66%. And also, 34% was not disclosed.

3.5. Impact of Reputation and Brand Management on Quality of Integrated Reporting

As per the model summary table 3.7, correlation coefficient between reputation and brand management and quality of integrated reporting is 0.829 as shown by the “R” value. Hence, there is a strong positive correlation between reputation and brand management and quality of integrated reporting. And, the R square value is 0.687. It says that 68.7% of variability of quality of integrated reporting was explained by the reputation and brand management. The ANOVA table of 3.8 shows that there is a significant impact of reputation and brand management on quality of integrated reporting ($F = (1, 158.080)$; $p = 0.000 < 0.05$).

H1: There is a significant impact of reputation and brand management on quality of integrated reporting. The hypothesis one can be accepted.

According to Table 3.9, Beta coefficient of reputation and brand management is 18.951. It says that if every unit of reputation and brand management has increased, the quality of integrated reporting has increased by 18.951 units. And the B value of reputation and brand management was statistically significant to make decisions as $p = 0.000 < 0.05$.

3.6 Impact of Increased Access to Capital and Shareholder Value on Quality of Integrated Reporting

According to the model summary table 3.10, correlation coefficient between increased access to capital and shareholder value and quality of integrated reporting is 0.792 as shown by the “R” value. Hence, there is a strong positive correlation between increased access to capital and shareholder value and quality of integrated reporting. And, the R square value is 0.628. It says that 62.8% of variability of quality of integrated reporting was explained by the increased access to capital and shareholder value. The ANOVA table of 3.11 shows that there is a significant impact of increased access to capital and shareholder value on quality of integrated reporting ($F = (1, 121.577)$; $p = 0.000 < 0.05$).

H2: There is a significant impact of increased access to capital and shareholder value on quality of integrated reporting. The hypothesis two can be accepted.

According to Table 3.12, Beta coefficient of increased to capital and shareholder value is 19.762. It says that if every unit of increased access to capital and shareholder value has increased, the quality of integrated reporting has increased by 19.762 units. And the B value of increased access to capital and shareholder value was statistically significant to make decisions as $p = 0.000 < 0.05$.

3.7 Impact of Risk Management on Quality of Integrated Reporting

As per the model summary table 3.13, correlation coefficient between risk management and quality of integrated reporting is 0.856 as shown by the “R” value. Hence, there is a strong positive correlation between risk management and quality of integrated reporting. And, the R square value is 0.732. It says that 73.2% of variability of quality of integrated reporting was explained by the risk management. The ANOVA table of 3.14 shows that there is a significant impact of risk management on quality of integrated reporting ($F = (1, 196.974)$; $p = 0.000 < 0.05$).

H3: There is a significant impact of risk management on quality of integrated reporting. Hypothesis three can be accepted.

According to Table 3.15, Beta coefficient of risk management is 19.663. It says that if every unit of risk management has increased, the quality of integrated reporting has increased by 19.663. And the B value of risk management was statistically significant to make decisions as $p = 0.000 < 0.05$.

3.8 Impact of Improve Government Relationship on Quality of Integrated Reporting

The table of model summary 3.16 shows that, correlation coefficient between government relationship and quality of integrated reporting is 0.922 as shown by the “R” value. Hence, there is a strong positive correlation between government relationship and quality of integrated reporting. And, the R square value is 0.851. It says that 85.1% of variability of quality of integrated reporting was explained by the government relationship. The ANOVA table of 3.17 shows that there is a significant impact of government relationship on quality of integrated reporting ($F = (1, 410.059)$; $p = 0.000 < 0.05$).

H4: There is a significant impact of improve government relationship on quality of integrated reporting. The hypothesis four can be accepted.

According to Table 3.18, Beta coefficient of government relationship is 18.472. It says that if every unit of government relationship has increased, the quality of integrated reporting has increased by 18.472. And the B value of government relationship was statistically significant to make decisions as $p = 0.000 < 0.05$.

3.9 Impact of Transparent Communication on Quality of Integrated Reporting

As per the model summary table 3.19, correlation coefficient between transparent communication and quality of integrated reporting is 0.866 as shown by the “R” value. Hence, there is a strong positive correlation between transparent communication and quality of integrated reporting. And, the R square value is 0.750. It says that 75.0% of variability of quality of integrated reporting was explained by the transparent communication. The ANOVA table shows that there is a significant impact of transparent communication on quality of integrated reporting ($F = (1, 158.080)$; $p = 0.000 < 0.05$).

H5: There is a significant impact of transparent communication on quality of integrated reporting. The hypothesis five can be accepted.

According to table 3.21, Beta coefficient of transparent communication is 19.940. It says that if every unit of transparent communication has increased, the quality of integrated reporting has increased by 19.940 units. And the B value of transparent communication was statistically significant to make decisions as $p = 0.000 < 0.05$.

3.10 Multiple Regression Analysis

The multiple regression analysis was used to identify the total impact of motivation factors such as reputation and brand management, risk management, increased access to capital and shareholder value, government relationship under the economic consideration and transparent communication under the ethical consideration on quality of integrated reporting.

As per the model summary table 3.23, correlation coefficient between motivations under economic and ethical consideration and quality of integrated reporting is 0.933 as shown by the “R” value. Hence, there is a strong positive correlation between motivation factors and quality of integrated reporting. And, the R square value is 0.871. It says that 87.1% of variability of quality of integrated reporting was explained by the motivational factors of economic and ethical consideration.

The ANOVA table 3.24 shows that there is a significant impact of motivational factors under economic consideration and ethical consideration on quality of integrated reporting ($F = (2, 239.059)$; $p = 0.000 < 0.05$).

H6: There is a significant impact of motivations under the economic and ethical consideration on quality of integrated reporting. The hypothesis six can be accepted.

According to Table 3.25, Beta coefficient of economic consideration is 18.508. It says that if every unit of economic consideration has increased, the quality of integrated reporting has increased by 18.508. And the β value of economic consideration was statistically significant to make decisions as $p = 0.000 < 0.05$. And also, the Beta coefficient of ethical consideration is 4.531. It says that if every unit of ethical consideration has increased, the quality of integrated reporting has increased by 4.531. Further, β value of ethical consideration was statistically significant to make decisions as $p = 0.37 < 0.05$.

3.11 Interview data analysis

This study decided to conduct the interviews with companies to get ideas of their management regarding the factors motivating to disclose integrated reporting of listed companies in Sri Lanka. The

interview was done via the telephone discussion. This study selected 10 companies for the interview which are won the awards for best integrated reports in Sri Lanka at CMA excellence in integrated reporting awards 2020. Among those 10 companies only 4 companies were responded for the interviews. Profile of interviewees as follows;

The qualitative data can be summarized as follows;

1. Voluntary decision or not:

According to the interview with companies, all of companies said that they were adopted integrate reporting concept as a voluntary decision of the company.

2. Purpose:

When consider about the purpose of adopting integrated reporting for the companies, they said that integrated reporting is a very standard method and it is a new trend among today companies around the world. And they said that IIRC is the international institution and because of that when they were engaged with integrated reporting, it really helps to enhance their relationship with international business world and attract new investors for their companies. Hence, the companies were believed that integrated reporting is a way to go ahead with international trend. Because of those reasons, companies were adopted integrated reporting and provide high quality integrated reports to attract their investors and to go ahead with international trend of business world.

“Actually, integrated reporting is the trend in the business world. Integrated reporting is very standard method and integrated reporting helps us to attract our shareholders. That’s why we had adopted integrated reporting to attract our shareholders.” [1]

“Our company mainly followed foreign principles. So, integrated reporting helps to go ahead with international trend and it makes easier to deal with international principles. Because that our company engaged with integrated reporting to go ahead with international tend.” [2]

3. Economic benefits and integrated reporting:

As per the interviews, the companies were said that integrated reporting was very important to economic benefits of the companies. It was confirmed by the interviewees as follows.

“Yes, integrated reporting important to economic benefits. Because, integrated reporting based on concept of integrated thinking know. So, in that perspective it really important to innovative ideas, strategic management. So, it helps non-financial aspects to create value in financial terms for the organization.” [2]

“Yes, integrated reporting affect to economic performance” [3]

“Yes, but integrated reporting not directly affect to the economic benefits of our company. But indirectly it affects to our economic benefits.” [1]

According to them, sometimes integrated reporting was not directly affected to economic benefits of the organizations. But definitely integrated reporting has affected economic benefits of their companies indirectly. Concept of integrated reporting based on the integrated thinking and IR helps to improve integrated thinking of management. According to them, integrated thinking helps to enhance their economic performance, strategic development and to manage their risks. And also, they said, in other side integrated reporting helps to attract their investors and protect the trust of investors with their companies. It helps to maintain their stable of economy. Especially they believed that integrated reporting helps to them to increase the shareholder value of the company and to maintain their financial capital.

4. Reputation and brand management with integrated reporting:

The companies said that, integrated reporting is very important concept for their reputation and integrated reporting helps to enhance their reputation and brand management. And they said that

because of the integrated reporting, they can improve their corporate reputation as internationally. Hence, they believed that integrated reporting helps to build a good corporate image internationally. According to them, the award of excellence in integrated reporting that awarded by CMA is most valuable for their corporate reputations and also, integrated reporting helps to build a good corporate image about the company. They believed that if they were not engaged with integrated reporting, it will be caused to build bad corporate image about the company because of sometimes the stakeholders may be think that their company is not go with the new concepts and trends in business world.

“Integrated reporting is a new and trending concept. So, if we are not adopting integrated reports, the stakeholders may think we are not followed new trend and new ideas. We think it will be caused to build bad corporate image.” [1]

So, integrated reporting most important to improve reputation and brand management of the company. It can be confirmed by followings,

“Yes, integrated reporting important to build good corporate image among the investors and others. We received award for best integrated report and it is definitely helps to improve our reputation.” [1]

“Integrated reporting helps to improve our company reputation. Specially, it important to improve our brand in internationally, because integrated reporting is international reporting method.” [2]

5. Risk management and integrated reporting

“Yes, integrated thinking most important to manage our business risks.” [4]

As per the companies that participated for discussion, risk management is the main part of integrated reporting and it helps to increase the risk management of the companies. According to them, because of the integrated reporting they can provide clear information regarding their corporate activities. Hence, they can provide quality information for their shareholders and it helps to reduce the crisis that can be arise between management and shareholders. And also, because of the integrated thinking, they can manage their risk with better strategies.

6. External pressure

As per the interview details, there were some pressures for companies to engaged with integrated reporting and to provide quality integrated reports. Mainly, investors are more likely to integrated reports, but specially, there is a pressure from competitors. According to them, they said that if their competitors are followed integrated reporting or they provide quality reports, it is a threat for them and definitely they want to provide quality integrated reports, otherwise they failed to faced their competition and they failed to go ahead with their competitors. It can be confirmed by,

“There is no any legal pressure. But there is a pressure from our competitors. Because, if they issue integrated reports, it may be a threat for our company.” [1]

7. Integrated reporting is a moral obligation

As per the interview details, they said that integrated reporting can be consider as a moral obligation of the company. Because there is no any regulatory requirement to engage with integrated reporting concept and they have provided integrated reports as a voluntary decision of the company.

“We engaged with integrated reporting as our voluntary decision. There is no mandatarly requirement. So, we can say it is our moral obligation;” [1]

And also, they said that integrated reporting helps to them to clear disclosure of information and it is a way to transparent communication with their shareholders and stakeholders.

“Integrated reporting helps us to communicate with our stakeholders. And it helps meet the stakeholder requirement because it is the standard method.” [3]

According to the interview details, additionally to above factors as reputation and brand management, increased access to capital and shareholder value, risk management, and transparent communication researcher explored that companies are engaged with integrated reporting to go ahead with new concept of international business world. And also, companies said that integrated reporting helps to improve the integrated thinking of the management. Hence, it caused to generate new and innovative business ideas for the companies. Researcher identified that improving integrated thinking is the most important factor motivating the companies to integrated reporting. Specially, companies are agreed with that integrated reporting helps to meet the requirement of shareholders. It confirmed by;

“Actually, integrated reporting helps our company to provide sufficient information as per their expectations.” [1]

Hence, it has caused to decreased information asymmetry between the shareholders and management. So that, researcher identified that decreased information asymmetry is the factor motivating the disclosure of integrated reporting.

4. Discussion

4.1 Discussion of Quality of Integrated Reporting

To meet the objective of identifying disclosure level of integrated reporting of listed companies, researcher used annual reports of selected companies in the year of 2020/2021. The quality of integrated reports measured by using disclosure level of 21 rules under the six capitals, eight content elements and seven guiding principles. According to annual reports of companies there is no any company that reached the total quality of integrated reporting. However, identified that most of companies tries to provide high quality reports according to integrated reporting framework. As per the data analysis, total quality of integrated reports of all selected companies summarized as a percentage of 65.82%. And also, the not disclosure level summarized as 34.18%. The total quality consists of quality level of capitals, content elements and guiding principles. Among those things, content element provides high contribution to disclosure level of the companies as 24.99%. Further, disclosure level of guiding principle provides lower contribution to total quality of integrated reporting as 17.67%. Quality of capitals of all companies can be summarized as 23.16% and 5.41% was not disclosure in the annual reports.

4.2 Discussion of Motivations

As per the data analysis and information of interview, all of companies were engaged with integrated reporting as a voluntary decision of the company. To identify the motivations of quality of integrated reporting, this study used motivations as reputation and brand management, increased access to capital and shareholder value, risk management, government relationships and transparent communication under the economic and ethical consideration.

4.2.1 Reputation and Brand Management

Reputation and brand management is the main advantage that can be derived from providing social, government and environment issues about the companies. Hence, integrated reporting is very important to reputation of the companies. To identify the impact of reputation and brand management on quality of integrated reporting, data was analyzed using simple regression analysis. As per the data analysis, there is a strong positive relationship between reputation and brand management and quality of integrated reporting and there is a significant impact of reputation and brand management on quality of integrated reporting of listed companies of CSE.

4.2.2 Increased Access to Capital and Shareholder Value

To identify the impact of increased access to capital and shareholder value on quality of integrated reporting, data was analyzed using simple regression analysis. As per the data analysis, there is a strong positive relationship between increased access to capital and shareholder value and quality of integrated reporting and also, there is a significant impact of increased access to capital and shareholder value on quality of integrated reporting with the strength of b value of 19.762. Shareholders are main stakeholder of the companies and they are expected more information from the companies. Because,

companies are always thinking to attract their shareholders and to satisfy them. According to the prior researcher Fillippo Vitolla (2019), he also found that shareholder pressure or shareholders' expectations were directly affected to the high-quality integrated reports. Integrated reporting is a best way to provide information to their shareholders by fulfilling their requirements. Hence, it can be concluded that increased access to capital and shareholder value is positively affect to quality of integrated reports of the companies.

4.2.3 Risk Management

Integrated reporting is also beneficial to risk management of the companies. Specially, integrated reporting helps to avoid crisis that can be arise between management and shareholders because of information asymmetry. As per the Garcia Sanchez and Ligia Noguera (2016) there is negative association between information asymmetry and disclosure level of integrated reporting. Hence, integrated reporting caused to risk management of the companies. To identify the impact of risk management on quality of integrated reporting of listed companies of CSE, data was analyzed using simple regression analysis. As per the data analysis, there is a strong positive relationship between risk management and quality of integrated reporting and also, there is a significant impact of risk management on quality of integrated reporting of listed companies in Sri Lanka.

4.2.4 Improve Government Relationship

In this study, to identify the impact of government relationship on quality of integrated reporting, data was analyzed using simple regression analysis. As per the data analysis, there is a strong positive relationship between improve government relationship and quality of integrated reporting and also, there is a significant impact of improve government relationship on quality of integrated reporting of listed companies. Government is the most important stakeholder that expect both financial and non-financial information from the companies. Because of that reason, improve government relationship is more beneficial to the companies. Companies try to provide information to government as their requirement. Hence, there was a positive impact of government expectation to provide high-quality integrated reports (Filippo Vitolla, 2019). So, it can be concluded that improve government relationship is positively affect to the disclosure level of integrated reporting.

4.2.5 Transparent Communication

To identify the impact of transparent communication on quality of integrated reporting, data was analyzed using simple regression analysis. As per the data analysis, there is a strong positive relationship between transparent communication and quality of integrated reporting. Further, results of simple regression analysis between these two variables have shown that there is a significant impact of transparent communication on quality of integrated reporting of listed companies. As per the Fillippo Vitolla (2019), the stakeholders pressure positively affect to the quality of integrated reports. Because, stakeholders are expected both financial and non-financial information very clearly. Integrated reporting is way to provide information as per the requirement of stakeholders. So, integrated reporting helps to transparent communication with stakeholders of the companies. Because of that reason, transparent communication of the companies positively affects to the quality level of the integrated reporting of listed companies.

4.3 Impact of Motivations on Integrated Reporting

To identify the total impact of motivation factors under the economic and ethical consideration on quality of integrated reporting, data was analyzed using multiple regression analysis. As per the data analysis, researcher found that there is a strong positive relationship between motivation factor under economic and ethical consideration and quality of integrated reporting and there is a significant impact of economic and ethical consideration on quality of integrated reporting with the strength of b value economic consideration as 18.508 and b value of ethical consideration as 4.531.

4.4. Discussion on Interview Data

In this study, researcher interviewed four companies that provide best integrated reports in Sri Lanka via the telephone discussion. When consider about the interview data, all of companies had engaged with integrated reporting as a voluntary decision of the company. According to that there is no any

regulatory requirement for adopting integrated reporting concept. And integrated reporting is a very standard concept and it is a trending concept among today companies. Specially, as per the interview data integrated reporting helps to go ahead with international trend in business world and integrated reporting makes easier for their companies to deal with international business world. Hence it is important to provide better quality integrated reports for the companies.

Integrated reporting is more beneficial to reporting information better aligned with investor needs (Steyn, 2014). As per the interview data, integrated reporting is very important to companies to attract their investors and fulfill the requirement of their shareholders. And according to them, the main reason for adopting integrated reporting is to attract their investors and to win trust of their investors. It helps to increase capital and share value of the company with attracting investors. The companies believed that integrated reporting helps to increase their economic benefits directly and indirectly. Hence, it helps to increase shareholder value also. As founded by Miji Kim (2011) increased access to capital and shareholder value is the motivating factor of CSR disclosure. As per the shareholder theory, companies should disclose the information to meet the expectation of shareholders. So, with interview data and shareholder theory, increased access to capital and shareholder value can be identified as a motivating factor of disclosure level of integrated reporting. Further, Maxi Steyn found that integrated reporting helps to risk management of the companies (Steyn, 2014) and risk management is the motivation of CSR disclosure also (Kim, 2011). As per the evidence of prior researchers and interview data it can be identified risk management as a motivation of integrated reporting disclosure level.

As per the stakeholder theory, stakeholders of the companies are expecting financial and non-financial information as social, governance and environment issues. Hence, it is significant to provide information to meet the requirement of stakeholders. Integrated reporting helps to companies to do their communication about financial and non-financial information very clearly. Because of the integrated reporting, companies can protect their transparency of communication. As per the interview data, companies can provide financial and non-financial information for their stakeholders' very clearly and very standard manner. Hence, companies are voluntary engaged with integrated reporting and provide quality integrated reports to their stakeholders and shareholders with the purpose of fulfilling their requirement. And also, most of companies believed that reporting about social, environment and governance activities of the companies is a moral obligation of the companies. Further, integrated reports important to companies to improve relationship with their stakeholders with providing more information (Steyn, 2014). Hence, companies are engaged with integrated reporting and companies have provided quality reports for their stakeholders. The prior researcher Miji Kim (2011) found that transparent communication as a motivation of CSR disclosure also. When considering prior researchers and stakeholder theory transparent communication can be identified as a motivation of integrated reporting.

The companies adopted integrated reporting as a voluntary decision of the companies. So, there is no any regulation for integrated reporting. But government is the one of stakeholder of the companies. Hence, government also expected financial and non-financial information from the companies. As per the interview data, companies said that integrated reporting makes easier to communicate with their stakeholders. So, that integrated reports help to provide information as per the requirement of the government also. Further, providing high-quality integrated reports is a way to decreased the excessive regulations of the government (Filippo Vitolla, 2019). Because of that reason companies provide quality integrated reports.

4.5 Comparing Qualitative Data and Quantitative Data

This study used both quantitative analysis and qualitative analysis to identify the factors motivating disclosure level of integrated reporting and impact of those motivating factors on quality of integrated reporting of listed companies. Further, this study conducted the interviews with four companies that have best integrated reports in 2020 to identify the motivations for providing quality and best integrated reports. To identify the motivation of quality of integrated reporting this study was used motivations as reputation and brand management, increased access to capital and shareholder value, risk

management, improve government relationships and transparent communication under the economic and ethical consideration.

According to the quantitative analysis of data, this study found that all listed companies which are engaged with integrated reporting, adopted integrated reporting for their reporting practices as a voluntary decision of the company. Further analysis was done to identify the total impact of motivations on quality of reports, this study found that there is a significant impact of motivations under the economic and ethical consideration on quality of integrated reports of listed companies in CSE. And also, the analysis was done to identify the impact of each motivating factor, this study found that there is a significant impact of each motivation factor on quality of integrated reporting of CSE.

According to interview data analysis also, this study found that they were adopted integrated reporting for their reporting practices as a voluntary decision of the company. And as per the interviews, integrated reporting most important for companies to improve their reputation and brand management, to increased capital and shareholder value, to manage their risk by integrated thinking, for best communication with their stakeholders such as shareholders, customers, employees and government etc., and specially to go ahead with international trend in international business world. Hence, companies are more likely to deal with integrated reporting and provide quality integrated reports. Specially, addition to those factors, researcher identified that improved integrated thinking and decreased information asymmetry are the factors motivating disclosure level of listed companies of CSE.

4.6 Motivations of Quality of Integrated Reporting

As per the interview data analysis, it can be proved that the results of quantitative analysis were true. Hence, it can be concluded that factors such as reputation and brand management, increased access to capital and shareholder value, risk management, improve government relationships and transparent communication under the economic and ethical considerations are the motivations of quality of integrated reporting. Further, researcher found that improving integrated thinking and decreased information asymmetry are the motivating factors of disclosure level of integrated reporting of listed companies of CSE.

5. Conclusion

Integrated reporting is the trending concept among the companies in business world. Most of companies are engaged with integrated reporting concept and companies are provided quality integrated reports as per the guidelines provided by international integrated reporting council as a voluntary decision of their companies. This study conducted to evaluate why companies are engaged with integrated reporting concept and why they provide integrated reports with quality. Hence the main objective of this study is to identify the motivation of quality of integrated reporting of listed companies of Colombo Stock Exchange in Sri Lanka. To achieve the objective this study conducted based on motivations under the economic and ethical consideration as reputation and brand management, increased access to capital and shareholder value, risk management, improve government relationships and transparent communication. Further, to achieve the aim of this study researcher followed three sub-objectives. The findings based on those three objectives can be summarized as follows.

Objective 01: To identify the factors motivating to disclose integrated reporting of listed companies in Sri Lanka.

According to the qualitative analysis, this study identified motivating factors under the economic and ethical consideration. As per the conducted interviews, researcher found that reputation and brand management, increased access to capital and shareholder value or share, risk management of the companies, improve government relationships are the factors motivating to disclose integrated reporting under the economic consideration. Transparent communication is the factor motivating to disclose integrated reporting under the ethical consideration. Additionally, to above motivating factors, as per the interview details of the companies, this study found that improve integrated thinking and

decreased information asymmetry are the factors motivating to disclosure level of integrated reporting of listed companies of CSE in Sri Lanka.

Objective 02: To identify the level of integrated reporting of listed companies in Sri Lanka.

To achieve objective two, this study used 21 rules under six capital, seven guiding principles and eight content elements that introduced by international integrated reporting council. As per the annual reports data, the total quality level of integrated reporting of listed companies in year of 2020/2021 identified as 65.82%. Further, 34.18% was not disclosure in the annual reports of listed companies.

Objective 03: To examine the impact of factors (reputation and brand management, increased access to capital and shareholder value, risk management, improve government relationships and transparent communication) on integrated reporting of listed companies in Sri Lanka.

To achieve this objective this study used simple regression analysis and multiple regression analysis. As per the multiple regression analysis, there is a significant impact of motivating factors under the economic and ethical consideration on quality of integrated reporting of listed companies of CSE in Sri Lanka. As per the simple regression analysis, each motivating factor such as reputation and brand management, increased access to capital and shareholder value, risk management, improve government relationships and transparent communication are positively affect to the disclosure level integrated reporting of listed companies of CSE.

5.1 Recommendation

This study conducted to identify the motivation of quality of integrated reporting of listed companies of CSE. When consider about the quality level of integrated reporting of listed companies in Sri Lanka, total quality of reports identified as 65.82%. It is good because it is more than half of hundred percentage. However, 34.18% was not disclosure in the annual reports in year of 2020/2021. When consider about the motivating factors, the findings of the quantitative analysis of study shows that there is a significant impact of motivating factors on quality level of integrated reporting of the companies. According to that companies were motivated by reputation and brand management, increase access to capital and shareholder value, risk management, improve government relationships under the economic consideration and also, companies were motivated by transparent communication under the ethical consideration to provide quality integrated reports.

Further, as per the information provided by companies that participated for the interview, integrated reporting is a very standard and important concept for their reporting practices. They were agreed with that integrated reporting is a way for go ahead with international trend in the business world. And also, they agreed with that integrated reporting has derived economic benefits for their companies directly and indirectly. Further, they were confirmed that integrated reporting helps to improve their corporate image, risk management by enhancing critical thinking of the management, to communicate with their stakeholders very clearly as per their requirements, improve the relationships with government and to fulfill the requirement of shareholders of the companies.

Based on above explanation it can be conclude integrated reporting is most important reporting practices for the companies and providing quality integrated reports is most beneficial to the companies. Specially there were adopted integrated reporting as a voluntary decision of the company and they were motivated by those benefits to engage with the integrated reporting as voluntary and to provide quality integrated reports. Hence, this study recommends to engage with integrated reporting concept and recommend to provide quality integrated reports to derive more benefits to the listed companies of CSE as increased reputation and brand management, risk management, increased access to capital and shareholder value and to communicate with stakeholders with protecting transparency of the information etc. And also, this study recommends that integrated reporting is a new and standard reporting practice and high-quality integrated reports are derived more benefits for the companies.

5.2 Limitations of the Study and Suggestions for Future Studies

This study does not consider about the companies which do not practice the integrated reporting to identify the why they were not adopted integrated reporting concept for their reporting practices. Hence, researcher suggest for future studies that identify the reasons of not adopting integrated reporting of listed companies in Colombo stock exchange. And also, this study does not consider about the private limited companies that are compliance with the integrated reporting framework to identify the motivation of quality of integrated reporting. So, it is significant to identify the benefits and motivation of quality of integrated reporting of private limited companies in future studies. Further, researcher suggest that identify the motivating factors for companies to engage in integrated reporting and provide quality reports by different industrial characteristics in Sri Lanka. Specially, this study had conducted interview with only 4 companies which are provide high quality integrated reports. Hence, researcher suggest it is significant conduct the interview with companies to identify motivating factors of integrated reporting according to the companies which are provide low quality integrated reports.

5.3 Implication of the Study

Objective of this study is to identify the motivation of quality of integrated reporting of listed companies of CSE in Sri Lanka. It discusses about the why today companies are engaging with integrated reporting concept and why they are trying to provide integrated reports with high quality. Hence, this study is very important to identify the benefits that can be arise for companies by providing quality integrated reports to their stakeholders. It helpful for the companies that not compliance with integrated reporting in currently to understand the importance of engaging with integrated reporting framework. And also, this study helps to understand the importance of providing quality integrated reports by companies to their stakeholders.

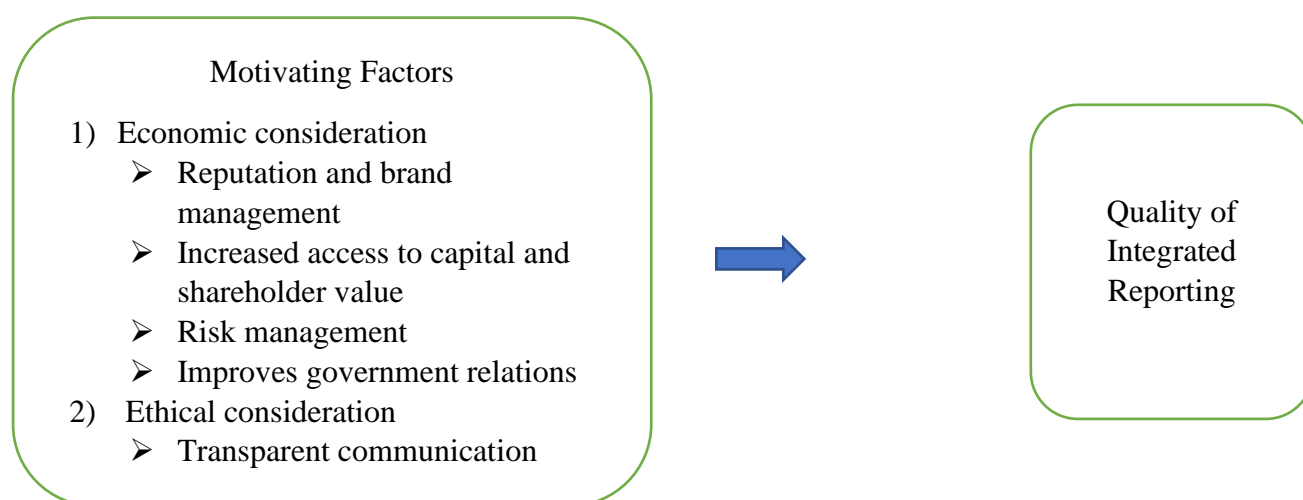
Appendix

QUALITY LEVEL OF COMPANIES

Company Name	Quality (%)	Company Name	Quality (%)
DIMO	95	Seylan Development PLC	60
National Development bank	94	Sierra Cables PLC	68
John Keells Holdings PLC	89	Singer (Sri Lanka) PLC	35
Aitken Spence Hotels Holdings PLC	83	Singer Finance (Lanka) PLC	68
Ceylinco Life Insurance	35	Singer Inustries (Ceylon) PLC	41
Commercial Bank of Ceylon	60	Sri Lanka Telecom PLC	59
Hatton National Bank	78	Swisstek (Ceylon) PLC	70
People's Insurance PLC	73	Raigam Wayamba Salterns PLC	57
People's Leasing and Finance PLC	71	Regnis (Lanka) PLC	75
Softlogic Life Insurance	76	Resus Energy PLC	76
Union Assurance PLC	76	Royal Ceramics Lanka PLC	70
Elpitiya Plantation PLC	73	Panasian Power PLC	65
Dipped Products PLC	73	People's Merchant Finance PLC	60
Access Engeneering PLC	70	Pime Finance PLC	70
Lanka IOC PLC	67	Prime Lands Residencies PLC	73
DFCC bank PLC	63	Orient Finance PLC	68
HNB Assurance	62	Namunukula Plantations PLC	71

Aitken Spence Plantation Management PLC	29	Nation Lanka Finance PLC	68
Aitken Spence PLC	71	Nations Trust Bank PLC	67
Alliance Finance Company PLC	65	Nawaloke Hospitals PLC	70
Alumex PLC	79	Mercantile Investments and Finance PLC	63
Bairah Farms PLC	68	LB Finance PLC	84
Bimputh Finance PLC	51	Lanka Tiles PLC	68
Cargills (Ceylon) PLC	40	Lanka Walltiles PLC	63
Ceylon Tea Brokers PLC	56	Laughs Gas PLC	81
Ceylon Tobacco Company PLC	46	Keells Food Products PLC	78
CitizenS Development Business Finance PLC	60	Kelani Valley Plantations PLC	63
Vallible Finance PLC	71	John Keells Hotels PLC	63
Vallible One PLC	78	Janashakthi Insurance PLC	59
Talawakele Tea Estates PLC	76	Convenience Foods (Lanka) PLC	51
Teejay Lanka PLC	40	Dilmah Ceylon Tea Company PLC	73
Sampath Bank PLC	73	E-channeling PLC	60
Samson Intenational PLC	63	Expolanka Holdings PLC	70
Sanasa Development Bank PLC	51	Haycarb PLC	46
Sathos Motors PLC	54	Hayleys Fabric PLC	76
Senkadagala Finance PLC	51	Hemas Holdings PLC	79
Seylan Bank PLC	52	HNB Finance PLC	87

Figure 2.1 Conceptual Framework



(Source: Miji Kim, 2011)

Table 2.1: Summary of Operationalization of Variables

Concept	Variables	Indicators	Measurement
Motivating factors for quality of integrated reporting (Independent Variables)	Economic consideration	Reputation and brand management	Scale measurement
		Increased access to capital and shareholder value	Scale measurement
		Risk management	Scale measurement
		Improves government relations	Scale measurement
	Ethical consideration	Transparent communication	Scale measurement
Quality of integrated reporting (Dependent Variable)	Quality of integrated reporting	<p>Seven Guiding Principles</p> <ol style="list-style-type: none"> 1. Strategic focus and future orientation 2. Connectivity of information 3. Stakeholder relationship 4. Materiality 5. Conciseness 6. Reliability and completeness 7. Consistency and comparability 	Scale measurement
		<p>Eight Content Elements</p> <ol style="list-style-type: none"> 1. Organizational overview and external environment 2. Governance 3. Business model 4. Risk & opportunities 5. Strategy and resource allocation 6. Performance 	

		7. Outlook 8. Basis of preparation and presentation	
		Six Capitals 1. Financial 2. Manufactured 3. Intellectual 4. Human 5. Social & Relationship 6. Natural	

Table 2.2: Adoption of Integrated Reporting in Sri Lanka

Year		2010	2011	2012	2013	2014	2015	2016	2017	2018
Total CSE listed companies		241	272	287	289	292	296	295	295	298
Total IR adopters		0	2	6	17	34	47	62	72	84

*(Source: Integrated Reporting Newsletter)***Table 3.1: Analysis of Reliability**

Reputation and brand management	0.789
Risk management	0.730
Access to capital and shareholder value	0.782
Government relationship	0.702
Transparent communication	0.772

*(Source: Survey data)***Table 3.2: Adopting of Integrated Reporting in Sri Lanka**

	Frequency	Percentage
Yes	74	100.00
No	-	-
Total	74	100.00

(Source: Survey data)

Table 3.3: Decision to Adopt Integrated Reporting is Voluntary Decision or Not

	Frequency	Percentage
Yes	74	100.00
No	-	-
Total	74	100.00

(Source: Survey data)

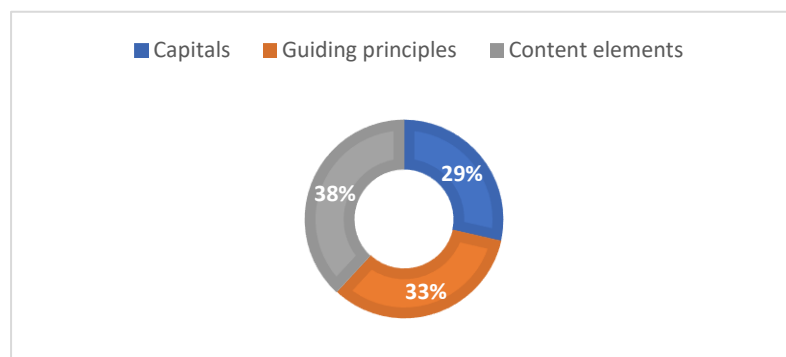
Table 3.4: Descriptive Statistics	Mean	Standard deviation
Reputation and brand management	4.1892	0.58672
Risk management	4.0405	0.58378
Access to capital and shareholder value	4.0856	0.53794
Government relationship	3.9932	0.66976
Transparent communication	4.0338	0.58275

(Source: Survey data)

Table 3.4: Total Quality and Classification of Disclosure Level

Total quality	100.00%
Capitals	28.57%
Guiding principles	33.33%
Content elements	38.10%

(Source: Survey data)

Figure 5.3: Total Quality and Classification of Disclosure Level

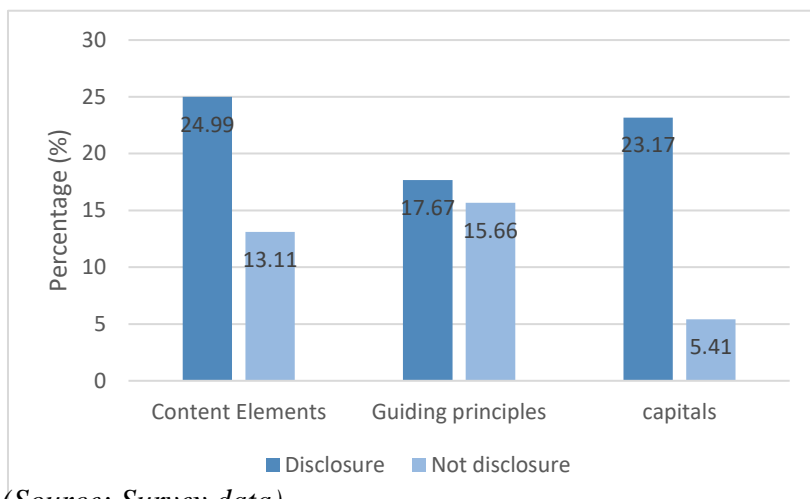
(Source: Survey data)

Table 3.5: Disclosure Level and Not-Disclosure Level of Integrated Reporting in Year 2020/2021

	Disclosure	Not disclosure
Content Elements	24.99 %	13.11%
Guiding principles	17.67%	15.66%
Capitals	23.16%	5.41%
Total Quality	65.82%	34.18%

(Source: Survey data)

Figure 3.2: Disclosure Level and Not-Disclosure Level of Integrated Reporting in Year 2020/2021



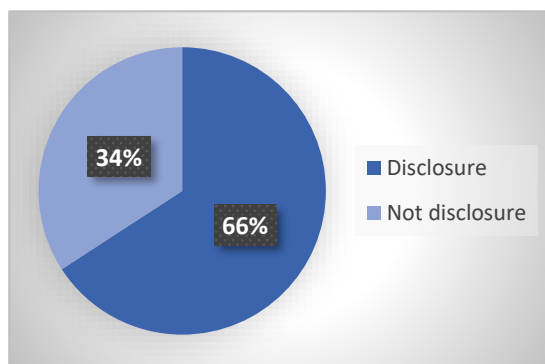
(Source: Survey data)

Table 3.6: Summarization of Total Quality Level of Integrated Reporting of Sri Lankan Companies in Year 2020/2021

	Disclosure	Not disclosure
Total Quality	65.82	34.18

(Source: Survey data)

Figure 3.3: Summarization of Total Quality Level of Integrated Reporting of Sri Lankan Companies in Year 2020/2021



(Source: Survey data)

Table 3.7: Model Summary of Reputation and Brand Management

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.829 ^a	.687	.683	7.556

(Source: Survey data)

Table 3.8: ANOVA Table of Reputation and Brand Management

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9024.662	1	9024.662	158.080	.000 ^b
	Residual	4110.433	72	57.089		
	Total	13135.095	73			

(Source: Survey data)

Table 3.9: Coefficients of Reputation and Brand Management

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-13.618	6.375		-2.136	.036
	Mean_RB M	18.951	1.507	.829	12.573	.000

(Source: Survey data)

Table 3.10: Model Summary of Increased Access to Capital and Shareholder Value

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.792 ^a	.628	.623	8.237

(Source: Survey data)

Table 3.11: ANOVA Table of Increased Access to Capital and Shareholder Value

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8249.550	1	8249.550	121.577	.000 ^b
	Residual	4885.545	72	67.855		
	Total	13135.095	73			

(Source: Survey data)

Table 3.12: Coefficients of Increased Access to Capital and Shareholder Value

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-14.967	7.385		-2.027	.046
	Mean_ACS V	19.762	1.792	.792	11.026	.000

(Source: Survey data)

Table 3.13: Model Summary of Risk Management

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.856 ^a	.732	.729	6.988

(Source: Survey data)

Table 3.14: ANOVA Table of Risk Management

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9619.038	1	9619.038	196.974	.000 ^b
	Residual	3516.057	72	48.834		
	Total	13135.095	73			

(Source: Survey data)

Table 3.15: Coefficients of Risk Management

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-13.680	5.719		-2.392	.019
	Mean_RM	19.663	1.401	.856	14.035	.000

(Source: Survey data)

Table 3.16: Model Summary of Improve Government Relationships

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.922 ^a	.851	.849	5.220

(Source: Survey data)

Table 3.17: ANOVA Table of Improve Government Relationships

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11173.245	1	11173.245	410.059	.000 ^b
	Residual	1961.850	72	27.248		
	Total	13135.095	73			

(Source: Survey data)

Table 3.18: Coefficients of Improve Government Relationships

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-7.992	3.693		-2.164	.034
	Mean_GR	18.472	.912	.922	20.250	.000

(Source: Survey data)

Table 3.19: Model Summary of Transparent Communication

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.866 ^a	.750	.747	6.748

(Source: Survey data)

Table 3.19: Model Summary of Transparent Communication

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.866 ^a	.750	.747	6.748

(Source: Survey data)

Table 3.20: ANOVA Table of Transparent Communication

ANOVA^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9856.846	1	9856.846	216.485	.000 ^b
	Residual	3278.249	72	45.531		
	Total	13135.095	73			

(Source: Survey data)

Table 3.21: Coefficients of Transparent Communication

Coefficients^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-14.664	5.523		-2.655	.010
	Mean_TC	19.940	1.355	.866	14.713	.000

(Source: Survey data)

Table 5.23: Model Summary of Motivating Factors of Economic and Ethical Consideration

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.933 ^a	.871	.867	4.891

(Source: Survey data)

Table 5.24: ANOVA Table of Motivating Factors of Economic and Ethical Consideration

ANOVA^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11436.753	2	5718.376	239.059	.000 ^b
	Residual	1698.342	71	23.920		
	Total	13135.095	73			

(Source: Survey data)

Table 5.25: Coefficients of Motivating Factors of Economic and Ethical Consideration

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-27.964	4.325		-6.466	.000
	Economic consideration	18.508	2.277	.754	8.127	.000
	Ethical consideration	4.531	2.135	.197	2.122	.037

(Source: Survey data)

Table 3.26: Profile of The Interviewees

No	Position	Business sector
1	Accounting Officer	Banks
2	Senior Manager- Management Accounting, Risk and Sustainability	Retailing
3	Deputy General Manager	Insurance
4	Head of Strategic Planning	Banks

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Localizing Strategies for a Wood Coating Product: A Case of Sri Lankan Multi-National Company

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Abstract

Multinational corporations are constantly looking for innovative ways to expand the reach of their popular products into new markets throughout the world. This study explores the introduction of a UV-based wood coating, which has achieved remarkable success in Bangladesh, to the Sri Lankan market. Specifically, it focuses on understanding consumer preferences among the Sri Lankan target audience and emphasizes the significance of localization strategies and tailored advertising campaigns in effectively launching the product in Sri Lanka.

This research study aims to shed light on the factors that influence consumers' decision-making processes of wood coatings. Additionally, localization strategies play a pivotal role in ensuring the seamless integration of the UV-based wood coating within the Sri Lankan context. Adapting the product to meet the specific needs and preferences of Sri Lankan consumers is vital for achieving market acceptance and sustainable success.

Moreover, the data being collected from the interviews with industrial consumers are analyzed using thematic analysis to derive the research findings. Ultimately, the findings of this study will provide valuable insights and recommendations for the successful introduction of the UV-based wood coating to Sri Lanka. By understanding the consumer preferences, embracing localization strategies, and implementing effective advertising campaigns, the local multinational company can maximize its chances of achieving market penetration, widespread adoption, and long-term success in the Sri Lankan wood coating industry.

Keywords: UV-based wood coating, Industrial consumers, Consumer preference, Localization strategies, Marketing.

1. Introduction

ABC Company is a local multi-national company that is being operated mainly in Sri Lanka, Bangladesh, India, Maldives, Pakistan and Seychelles. The company is the leader for wood coatings in Sri Lanka (ABC, 2022). The concerned product Ultra-violet wood coating (UVWC) is a special type of coating with unique manufacturing and high quality. This study aims to generate strategies to make UV wood coating successful in Sri Lanka as it is successful in Bangladesh. Factors such as the local market demand, consumer preference in Sri Lanka and localization strategies need to be considered.

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To localize the product as per the Sri Lankan context, it is needed to consider adapting suitable marketing strategies and product modification.

1.1 Research Problem

“Localization strategies that are needed to successfully launch the Ultra-violet wood coating to Sri Lankan market, which was already successful in Bangladesh.”

The UVWC has unique features compared to other traditional products currently available in Sri Lanka. The technology used in the manufacturing process is Ultra-violet. Therefore, the company has decided to launch it in Sri Lanka. Thereby the research questions aim to figure out whether industrial consumers are likely to purchase a new product under the category of wood coatings which has unique features and improved quality and recommend the suitable localization strategies to successfully launch the product in Sri Lanka.

The failure or success of UV wood coating can be assessed with two dimensions, consumer preference and potential demand. According to Guleria (2015), consumer preference explains how consumers rank a collection of goods or services. Entering a new market can be risky since firms cannot be certain of the outcome. Thereby the company needs to pay attention to factors such as consumer preference, consumer demand, existing competitors in the market, and purchasing power of consumers (Claude-gaudillat & Quélin, (2006). When a company enters a new market, the role of culture in the localization of a marketing strategy and precise components of the marketing mix that need to be localized should be studied. Being responsive to local needs lets the company rapidly deal with local competition and global brand recognition. The company can localize the UV wood coating to Sri Lankan consumers using localization strategies by modifying the original product.

1.2 Research Questions

1. Whether industrial consumers in Sri Lanka prefer a wood coating product that has unique features / unique manufacturing technology?
2. What localization strategies are needed to successfully launch the product in Sri Lanka?

2. Literature Review

2.1 Consumer preference

Consumer preference is a person's willingness to choose an item that will satisfy them which is characterized as subjective tastes of various goods bundles as evaluated against their utility (Ubeja et al., 2013). Consumers pay attention to new products where novel features are given more weight in preference assessments (Carpenter et al., 1994). They compare potential advantages, risks and utility level against existing products (Zhou & Nakamoto, 2007). Collins-Dodd and Lindley (2003) mentioned that customers' perceptions of private brand products influence their propensity to buy them.

According to Ubayachandra and Mendis (2020), buying behaviour also impacts whether a consumer would prefer a newly launched product such as UV wood coating. According to Smith & Aaker (1992), a key aspect in the relationship between loyalty and other factors is the user's experience. Most customers stick with a brand because of the satisfaction they gained by using it for a long period of time. There is a positive relationship between the brand image and consumer buying behaviour. If a brand is popular or favourable to a customer, they are not reluctant to buy products offered by that brand. (Ubayachandra & Mendis, 2020). ABC holds a high market share and a favourable preference from existing customers. Thereby, it can be predicted that a new product introduced by them would not be rejected by customers owing to the customer promise made by the company in the long term.

Price also makes an impact on consumer preference. When a product has high market demand, a rise in price deter consumers buying that product and fall in price increase the consumer preference (Zhao et al., 2021). Ubayachandra & Mendis (2020) has proved that there is a relationship between

price and buying behaviour of consumers for wood coating and paint related products. But prices have a relatively small impact compared to brand image and product quality. For novel products, if comparative features are better than any existing features of the product and yield higher satisfaction, consumers buy it irrespective of price. Since UV wood coating has advanced features than ordinary wood coatings, this argument best suits to explain the consumer preference towards UV wood coating.

2.2 Theory of consumer preference

Samuelson's consumer preference theory (1938) or called Revealed Preference Theory discloses how people make financial decisions based on their own preferences and financial limitations. What consumers purchase under various conditions, particularly under various income and pricing circumstances, can reflect preferences. If a customer purchases a particular bundle of products given that income and price levels are held constant, that bundle is "revealed preferred" to any alternative bundle that the consumer could afford. An observer can deduce a representative model of the consumer's preferences by altering income, pricing, or both (Samuelson, 1948). The two most notable features of revealed preference theory are it provides a theoretical framework for explaining consumer behavior based on the bare assumption that consumers are rational and will make decisions that advance their future goals much more effectively; and it stipulates necessary and sufficient conditions, which can be empirically tested, for observed choices to be consistent with utility maximization (Samuelson, 1948). When proposing localizing strategies, the income of people needs to be considered. Because in Sri Lankan context, people are highly sensitive to the price owing to different income patterns.

2.3 Localization

Localization can be identified as the process of altering tangible and/or intangible qualities of a product as per the requirements of domestic target market in order to make the product compatible with the concerned country's environmental circumstances (Medina & Duffy, 1998). Localization is a very important in this study since the research is focused on formulating localization strategies to launch the wood coating product in Sri Lanka. Haron (2016) highlighted that there are some advantages of localization. Localization helps to increase market share by focusing on customers in a new market segment. By localizing, local needs can be responded to, and it can help to expedite local business requirements. Also, it will help to gain a competitive advantage in local markets (Cavusgil et al., 1993). The following are different strategies that can be adopted to localize wood coating and related paint products as per literature.

2.3.1 Sustainability

Sustainability is an important aspect of this study since one of the main features of the UV-based wood coating is eco-friendliness, compared to other traditional wood coating products (Searles, 2021). According to the world commission of Environment and Development (1978), sustainability is the growth that meets current needs without compromising the potential of future generations to satisfy their own needs. UV based wood coating has low VOC (Volatile Organic Compounds) levels compared to other wood coatings (Morris, 2020). The product has a competitive advantage over other traditional wood coatings because of the sustainability aspect. According to a study done by Lambert & Cagan (2015) to examine how the consumer's perception of the price, function, and form of the product is affected when the environmental impact of the product is known, it is evident that presenting additional information to customers about the environmental impact is necessary since it can impact consumer preference directly. Sustainability is in fact related to localization. According to Dogan and Walker (2008), local knowledge and various user needs are main pillars of sustainability. But they are not given sufficient attention in today's product design and manufacturing practices. Globalized products have a negative impact on the environment by using high amounts of energy and by creating enormous waste. But they are able to serve a mass market because they are both available and low in cost. The negative impact can be reduced by integrating localization into product design, production, and post-use of the product. Dogan and Walker (2008) also mentioned that having localization in

product design and development can address sustainability better by using resources effectively, creating skilled employment, designing services for diverse user needs and prices that may reflect the true cost of the product which include social and environmental costs.

2.5.2 Marketing

Marketing is another strategy to localize wood coatings. According to Armstrong and Kotler (2011), creating a relationship with clients and giving them value where they could remember the product in their minds can be called Marketing. Properly executed marketing will help businesses to increase sales and profits (Bay et al., 2008). The promotional mix, which combines advertising, personal selling, sales promotion, public relations, and direct marketing is used to describe a company's overall marketing communication strategy (Kotler & Keller, 2012). Thereby the overall marketing strategy of a company can be tailored as per the local consumer's taste to offer a localized marketing campaign to the product.

Advertising, which is a part of promotional mix has emerged as one of the most important commercial operations today and is used to spread product awareness by marketers, to persuade customers to do something in response to a product (Arens, 2005). A considerable correlation exists between advertising and consumer preference. An advertisement will receive more exposure if it makes a good enough impact on the viewer and based on that consumers will behave accordingly. The positive relationship between advertising and consumer behavior suggests a well-executed advertising campaign can generate an interest among Sri Lankan consumers. This, in turn, can lead to an increase in consumer preference for UV wood coating.

An important component of a brand's overall marketing strategy to improve customer relations is frequent after-sales service. The term "after-sales services" (ASS) is a customer-oriented process where services are provided after the delivery of the product to support consumers to use the product throughout its lifespan. After-sales has consequently grown as a significant strategic source of differentiation and competitive advantage in the role of marketing (Shokouhyar et al., 2020). Therefore, successful marketing and after-sales can bring in a positive consumer preference for UV wood coating.

2.5.3 Market Segmentation

Market segmentation is the process of dividing a market into smaller groups of consumers with similar needs, traits, or behaviors and may need different products or marketing strategies (Goyat, 2011). Marketers can identify different client groups whose behaviors differ greatly from those of other groups, and this enables businesses to modify their marketing mix to meet the specific requirements of various market segments. For example, an organization can identify price conscious or quality conscious customers and group them accordingly to offer a product range to meet such requirements (Goyat, 2011). Zaltman (1997) mentioned that marketing experts have identified that despite numerous similarities, consumers were not all the same through research. Such research led to the creation of the market segmentation concept, which called for breaking down the overall heterogeneous but potentially lucrative market into relatively smaller homogeneous groups or segments so that a specific marketing strategy could be developed for each one.

2.5.4 Pricing

Price is another factor that can be localized contextually to suit different markets and influences consumer purchasing decisions. Consumers pay a price to obtain a product (Kotler & Armstrong, 2011). Farahmand and Chatterjee (2008) define price as the monetary value that is attached to an item when it is purchased, sold, or made available for purchase. Marketers realize that pricing strategies must be compatible with the company's overall image (positioning), sales, earnings, and return on investment goals, which is already a difficult undertaking, makes the challenge even more difficult to localize (Herrman et al. 2007). Pricing enables market segmentation, identify products, develop consumer incentives, and communicate with rivals also an opportunity to build loyalty, keep current

clients, and attract potential customers (Sahay 2007). Many businesses compete in the market effectively through successful pricing (Sinambela et al., 2019).

Numerous pricing strategies may create a strategic yet attractive dilemma for businesses and influence purchasing behaviour. Affordable prices, prices according to benefits, prices according to quality, and competitive prices are some of pricing indicators. (Kotler and Armstrong, 2011). Companies choose high prices, cheap, or just follow market prices. Both "high and low price" (hi-lo) method and the "everyday low prices" (EDLP) approach have become well-liked pricing strategies among businesses. As an illustration, the product is sold for Rs.999.99 as opposed to the usual Rs.1000.00. This gives the appearance that customers are paying less for the product, which accelerates sales (Lamb et al. 2008). The fixed price offer signifies that the product is not subject to price discounts, however the discounted pricing system indicates the product's price may be cut slightly as and when appropriate to promote additional sales (Boonlertvanich 2009).

Consumers assess the product quality and price both when making a purchase and a reasonable price may satisfy them at the point of purchase. The price of products should be set as competitive with those of similar goods considering profitability and customer satisfaction (Sahay 2007). Overall, it's critical for marketers to select price communication techniques that convince customer purchasing by highlighting its value both at the point of sale and using multiple media. It seems sense to anticipate a favorable and predictive link between price and brand loyalty because price plays a significant role in determining the performance and eventual fate of the product and firm. Thereby, companies should be strategic and competitive in setting prices based on different segments of customers and preferences (Romani, 2006).

2.5.5 Packaging

According to Kent and Omar (2003), packaging is a set of activities that aims to protect, recognize and store a particular product effectively while assisting it to get marketed successfully. Therefore, packaging becomes a strategy of localizing. Silayoi and Speece (2007) mentioned, the packaging should be designed to protect the quality of the product without damaging during transportation or in storing. Brands combine a variety of packaging elements including colors, designs, forms, symbols, and messages which draws viewers' attention to the product. Therefore, the significance of package design and the use of packaging as a vehicle for communication and branding is expanding (Silayoi & Speece, 2007). According to Deliya and Parmar (2012), different sizes of packaging eliminate cost barriers and help to reach new target markets. Consumers perceive that good quality packaging signals about a good quality product revealing a positive relationship between packaging and product quality. Packaging includes many nonverbal cues, and two-thirds of stimuli reach the brain through the visual systems (Zaltman, 1997). According to Wright (2006), packaging is effective as a marketing tool since most customers are influenced by the look of a product rather than aspects such as smell, texture and taste which reveals that packaging of a product plays a major role in attracting customers. According to Silayoi and Speece (2004), packaging directly impacts purchasing because it is a necessary part of the selling process. Information in the package can influence the choice of the consumers. For instance, in wood coatings, information about Volatile Organic Compound (VOC) content, pigments used in manufacturing are important for buyers to make the purchase decision by creating product credibility and lowering ambiguity.

Packaging can be used as a localization strategy for a product. Khan et al., (2017) mentioned the heavy localization of packaging on a product is not the most suitable strategy when it enters a foreign market. This study revealed that for hedonic products (goods that provide fun and entertainment) such as designer clothes, sports cars, luxury watches, standard packaging is preferred. In contrast, for utilitarian products (instrumental or functional products), more standardized packaging is chosen under conspicuous situation (clearly visible) but not under inconspicuous situation (not clearly visible). UV coating is more inconspicuous and cannot be seen before applied on a surface. Therefore, standardized packaging is not viable, and the company should understand the degree of localization to the packaging. The above literature indicates that packaging plays a vital role in product

choice, promotion, informing consumers and determining the degree of localization. Hence the company should consider the above factors when designing the packaging of the product.

3. Research Methodology

The research questions of this study result in the adoption of a qualitative methodology, with an interpretivist epistemology and subjective ontology (Saunders et al., 2009). The research strategy employed in this study is a case study and it will be a single case (Yin 2003), because the research will collect information about one certain aspect from the participants, and that is consumer's preference towards a technologically advanced wood coating. Therefore, consumer preference is one unit, and this case study is a holistic case study.

The data related to the research questions were collected using in-depth interviews to gain a deep understanding or rich insights of consumer preference towards UV wood coating and a variety of interview methods such as face-to-face physical interviews, online interviews through zoom, and over-the-phone interviews were conducted. A semi-structured interview guide was used as the data collection instrument where interviewees find it flexible to share their experiences and perspectives with a follow up. Paul Samuelson's consumer preference theory (1938) was used as the basis for conducting interviews and in developing the interview guide. Industrial customers were selected as the unit of analysis which includes woodworking and furniture industries, flooring companies, carpentry businesses, wood coating distributors, interior designers, contractors, construction companies, architects and professionals or companies specializing in the application of UV-based wood coatings. These respondents were selected based on the ability of them to make a notable impact on the wood coating market because they purchase such products on a large scale and are also able to provide valuable insights into current market trends and future trends. The data collection process has been terminated after collecting data from eight interviewees since the data got saturated. Hence the sample size is 8 and interviewees have been identified as P-01 to P-08 to protect their anonymity. Convenience Sampling is chosen as the method of sampling because it is low-costly and easy to conduct and gather information. According to Nikolopoulou (2022), convenience sampling is suitable to be used when it is needed to understand people's attitudes and viewpoints and it would help to find the attitude of industrial customers towards the new wood coating.

Thematic analysis was used to analyze the data collected from the interviews by following the steps proposed by Braun and Clark (2006). After collecting relevant data, the first step was familiarizing the data and then those data were coded and grouped based on the relative relationships. Based on the grouped codes, different categories were formed, and those categories were amalgamated relationally to generate themes of the study which reveals answers to research questions and to generate localization strategies.

The duration of the research was set to eight months, encompassing the period from January to August 2023. This timeframe was established to ensure ample time for the thorough execution of each research phase, including the background study, initial literature review, data collection, data analysis, and drawing conclusions and recommendations.

4. Analysis and Discussion of Findings

4.1 Analysis

4.1.1 Details of interviewees

Table 1
List of interviewees

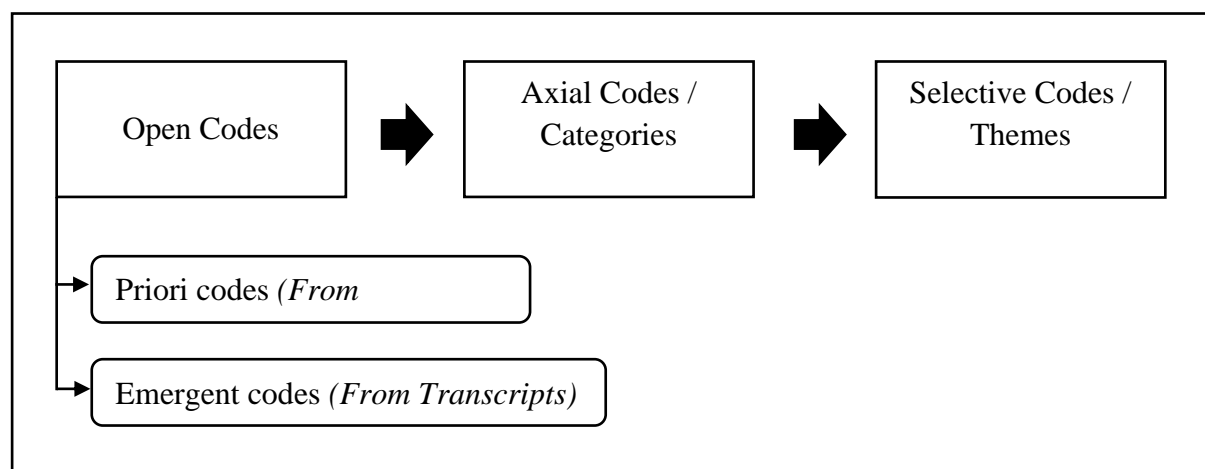
No.	Interviewee Identification	Type of the organization	Designation of interviewee
1	P-01	Freelance Interior Designer	Freelancer
2	P-02	Timber work manufacturing organization	Factory manager
3	P-03	Timber work factory	Factory manager
4	P-04	Contract-taking construction company	Owner
5	P-05	Wood working company	Factory manager
6	P-06	Timber work manufacturing organization	Operations manager
7	P-07	Construction company	Procurement manager
8	P-08	Freelance Interior Designer	Freelancer

Note. Developed by author.

4.1.2 Coding

The steps in the thematic analysis (Braun and Clark, 2006) were followed to analyze the interview data. An interview transcript was made by listening to interview recordings. Firstly, open codes are generated using the literature review (piori codes) and using the interview transcripts (emergent codes). By amalgamating the relative open codes, axial codes or categories are generated. With careful understanding about the relationships between categories, the themes of the research or selective codes are generated using two coding books for the two research questions. Figure 1 below depicts the flow in which the themes are generated.

Figure 1
Flow of codes



Owing to the distinctive features and benefits of UV wood coating, most interviewees find an interest in buying and testing the product even at higher prices than existing traditional wood coatings in Sri Lanka. Product attributes such as smoothness of finishing, easiness to clean, odor, colour and

topcoat are highlighted by some participants. ‘Pricing’ is a decisive factor highlighted by many participants. Most end consumers of interviewees seek a balance between price and quality while some are concerned about them individually. P-03 strictly mentioned that they are reluctant to pay additional even though the product yield greater benefits owing to the crisis in Sri Lanka in 2022-2023. Interviewees underlined that purchase decisions are impacted by ‘quality’. All interviewees have end customers who value quality. More interviewees specified that ABC products are of high quality and some of them only use ABC products rather than any special request from the client. P-03 mentioned that they do not foresee quality in the current crisis period but prefer any cheap product that gets the job done properly. But P-01 and P-03 use ABC products for their handful of clients who value quality in the first tier. ‘After-sales service’ has become a decisive purchasing variable among some industrial manufacturers, and they tend to buy from ABC company due to their effective after-sales service. It is evident that corporate clients of ABC company are concerned about after-sales. All contributors mentioned that ‘marketing, promotion and product awareness’ is important since the product is new. The importance of traditional marketing such as TV, radio advertising and modern marketing such as social media which make end users aware, both were pointed out during interviews. The essentiality of promoting the product individually to industrial customers was also given attention at interviews. The findings emphasized the relationship between ‘packaging’ and customer behavior while emphasizing the role of individual preferences towards packaging. An emphasis on both big and small packages and varying duration of consumption cycles of the package were given attention to. ‘Sustainability and eco-friendliness’ is another aspect which customers are concerned about. Most informants mentioned the neutral urge for sustainability standards being noted by households while a few corporate clients are highly concerned. Due to the economic crisis in 2022-2023 in Sri Lanka, clients are not much concerned about sustainability. However, foreign clients are contrastingly bothered about sustainability over locals.

The transcript data and the findings of the research were utilized to generate the two coding books and five themes have been developed (Braun and Clark, 2006) which supports to conclude research objectives and generate localization strategies. The five themes are,

- Positive consumer preference towards product attributes, brand and company.
- Positive consumer attitude towards the aspect of sustainability.
- Heavy consideration about financial aspects.
- Localized marketing efforts can convince the customers to purchase the product.
- Localizing product attributes to segment the market based on quality conscious and price conscious customers.

4.2 Discussion of findings

The Consumer Preference Theory (Samuelson, 1948) is used as a theoretical lens for and five major themes serve as the foundation for the discussion of this study. According to Samuelson (1948), the Consumer Preference Theory reveals how consumers make financial decisions based on their personal tastes and budgetary constraints.

4.2.1 Positive consumer preference towards product attributes, brand and company

Consumer preference is correlated to product attributes, brand popularity and image of the company and regulated by distinctive features such as excellent resistance, low solvent emissions, low Volatile Organic Compound (VOC) content (Morris, 2020) and technology of UVWC. Searles (2021) highlighted the high-quality finish and durability of UVWC. P-01 mentioned about the features they consider when recommending a product to a customer:

“..... we mainly see features such as easiness to clean, smoothness of finishing, whether it emits a toxic odor, colour of the coating, durability..... yes things like that”

P-01’s statement reveals they utmost see product features. P-06 highlighted they are not much concerned about durability since it fades in around 2 years:

“We don’t look much about durability”

But literature reveals UV has higher durability and features than existing wood coatings beyond customer expectations. P-04 and P-06 emphasized the following respectively:

“If the product has number of advantages, we would like to get the experience of UV”

“Main product is SLK by ABC. I only recommend and buy ABC products. Any new development, we are always ready to purchase, but they need to match with our production process.”

The above quotes disclose that there will be a potential preference for UVWC. Carpenter et. al, (1994) has mentioned novel features are more preferred by consumers due to their uniqueness. As stated by Searles (2021) and Morris (2020), the product is unique due to the inherent features it possesses. Thereby consumers seek superior features in a novel product compared to existing products to purchase them (Zhou & Nakamoto, 2007).

Quality is another aspect deciding the consumer preference. Searles (2021) has mentioned that a surface with UVWC has a brilliant shine and a very strong and smooth finish typically stain and chemical resistant, also resistant to abrasion and scratches. These hallmarks unfold the quality of UVWC. P-05 has brought up the following argument:

“Quality is what we mostly depend on. If we can get a good finishing, we use it.”

P-08 has mentioned under whatever circumstance, their company purchases products only from ABC because of the consistent quality. P-04 also highlighted the consistency in quality of ABC products which outturned continuous purchases with them:

“As they are offering a quality product compared to other wood coatings in the market, I always go with ABC products for my clients”

“ABC always maintain the quality throughout. So, we always look for the quality of wood coating product. That’s why our company has stucked with ABC for a long time”

P-06, a furniture manufacturer that caters to foreign clients declared that foreign clients are only concerned about quality:

“Foreign customers are worried only about superior quality, if quality is not to the excellent standard, they reject, and we get no business from them”

The above quotes reveal that customers show an interest in UVWC due to the high quality. Partakers also mentioned goodwill and brand image of the company are important for purchase decisions. P-07 pointed out they use reputable and popular brands that ensure quality:

“We work with a variety of reputable wood coating brands to ensure quality and durability of finishes we apply to wooden surfaces. SLK by ABC, and NPN are the two main brands we use. Because they have a good brand image and a reputation”

Most industrial customers who are interviewed are currently loyal buyers of ABC products. P-02 and P-04 respectively disclosed:

“The brands that we purchase mainly include ABC Company’s products. We use their products 80% of the time.”

“We always try to go with the brand ABC unless there is a specific request form the client.”

Kotler and Keller (2012) have described brand image as a valuable attribute for a consumer to decide a product purchase. They explained popular and stable brands can attract more and retain existing customers. P-06 believes that ABC maintains a good brand image and a positive good will:

“I don’t have any issue about SLK by ABC as of now. They maintain the reputation of their brand from the time I purchased it years ago, I personally have a very good image about them”

According to the provincial rankings of the Outlet Census Survey, Pepper Cube Consultants (Pvt) Ltd (2021), ABC is the market leader for wood coatings in Sri Lanka. It justifies that products of ABC have a good brand image with a loyal customer base, also proven by above quotes and eventually stimulate consumer preference.

Research findings reveal that after-sales services (ASS) make a measurable impact on purchase decisions. ASS is a significantly strategic method of differentiating and achieving competitive advantage (Shokouhyar et al., 2020). P-02 and P-06 specifically highlighted that continuous purchases depend on the ASS provided by a company:

“We use ABC company products mainly because their ASS are better than other companies”

“Mainly we look into the after-sales service a company offer”

The above arguments claim that company follow-up their customers after a purchase and that has brought recurring customers to ABC. All the above justifications and quotations clearly prove that UVWC shall be preferred and purchased by industrial customers.

4.2.2 Positive consumer attitude towards the aspect of sustainability

When assessing the positive consumer attitude towards the aspect of sustainability it is important to consider the sustainability of the product. Table X below shows the lesser use of solvent, pollution potentials, and energy in producing UV-based wood coating which promotes environmental friendliness.

Table 2

Eco-friendliness of UV

	Conventional Solids	High solids	High solids	UV based
Solvent usage	High	Moderate	Low	Low
Pollution potential	High	Moderate	Low	Low
Energy usage	High	High	High	Low

Source: (Searles, 2021)

Various researchers have highlighted the environmental benefits of UV-based wood coating compared to traditional methods. UV coatings eliminate volatile solvents and emissions during the coating and curing process (Rawat et al., 2019). As environmental regulations tighten and consumer concerns grow, the coating industry is shifting towards more eco-friendly options (Hwang et al., 2009).

Positive consumer attitudes towards sustainability are evident, with many expressing willingness to pay extra for environmentally friendly products. Participants from both timber manufacturing and construction industries confirm this trend. P-06 noted,

“There are some companies to which we provide services who value these aspects such as sustainability. Companies like DLM, don’t have an issue, and they would pay extra.”

P-07 also mentioned customers are increasingly willing to pay for both a clean aesthetic and sustainability.

“Yes, many customers today are increasingly willing to pay extra for products that offer both a clean aesthetic and sustainability”

P-01 emphasized giving priority to environmentally friendly products:

"Usually, I value products that are environmentally friendly."

However, dissenting views exist. P-02 suggests that while some customers are willing to pay more for sustainability, the majority are not.

"Based on the current conditions it's hard to say so. But there will be few customers who are willing to pay more for a sustainable product"

This sentiment is echoed by P-03, who emphasizes quality as the primary factor in purchasing decisions, with sustainability as a secondary consideration.

"No, we are not concerned that much about sustainability when making the purchase decision, the main thing is quality"

Nevertheless, P-04 from a construction company emphasizes prioritizing environmentally friendly products and acknowledges that customers are willing to pay for a sustainable product.

"Yes, we like to give priority to environmentally friendly products"

Subsequently, they mentioned that customers are not only willing to pay for a sustainable product but also for a product that is of high quality:

"Yes, all would like..... Also, they are not paying only for the sustainability aspect, but also for a high-quality product"

This aligns with findings from Lambert and Cagan (2015), suggesting consumers prioritize functional attributes over price and form when sustainability information is provided. From both interview findings and literature, it is evident that consumers tend to value the qualities/functions of a product more when information about sustainability is presented.

P-07 which is a construction company mentioned that they are prioritizing environmentally friendly products in work operations:

"Yes, I always try to use eco-friendly products for my work."

Overall, the majority of participants express a positive attitude towards sustainability, with six out of eight willing to purchase environmentally friendly products. This aligns with research findings indicating a strong consumer preference for brands causing less environmental damage (Tejeswari, 2016). Additionally, Matharu et al. (2020) note that increased awareness of environmental issues encourages consumers to choose eco-friendly options over alternatives.

In conclusion, the sustainable nature of UV-based wood coating products is likely to attract consumer preference. The positive attitudes towards sustainability expressed by participants, combined with broader consumer trends favoring eco-friendly products, suggest a promising market for such coatings.

4.2.3 Heavy consideration about financial aspects

Within the contemporary money driven economy, financial resources have become a fundamental strategic resource that heavily impacts consumer behaviour and buying patterns (Jiang et al., 2019). Money available with people can be used to buffer people's subjective well-being and preferences, thereafter, judged that money has a direct relationship to consumer preference (Diener & Seligman, 2004). According to Jiang et al. (2019), having access to financial resources can improve a person's capacity to realize personal needs and improve preferences. Given the above literature, it denotes that financial aspects are correlated to preferences. Consumers tend to buy products considering the income they receive in periodic terms, savings, budget, and the cost of products have a direct influence on purchasing decision as pertaining to the views of Jiang et al. (2019).

Paul Samuelson's Consumer Preference Theory explicated how rational consumers make financial decisions based on the budget available. Here, the personal preference of a consumer depends on the attributes of the product such as price, quality, usability, utility, sustainability, etc. (Samuelson,

1948). Thereby, budget becomes an important factor that decides the buying preferences of rational consumers. As per the interview findings, the industrial customers of wood coatings disclosed two types of purchasing patterns based on their end customers. The first type is concerned about quality standards, and they are not bothered about pricing, that is mostly corporate clients. P-06 mentioned that they only purchase quality products since they cater more foreign clients:

“Quality is very good in SLK by ABC. Therefore, we continuously buy that product.... mmm so quality is the first aspect we look before purchasing”

The second type is individual households which propose a budget, where industrial manufacturers must stick within. P-01 mentioned that high end quality products such as ABC, DLX are used for production only if the end customer has a flexible budget concluding that preference for high quality is correlated to budget given the end customer:

“I generally suggest high end brands such as ABC, DLX for budget-flexible clients”

P-03 spotted, in most instances the raw materials used in manufacturing furniture depends on client’s budget:

“...if they have a budget, we match it with the budget also.”

The theory of Consumer Preference directly reveals the idea adjoining the above quotation. The upper said quotations and literature expose that consumer preferences depends on the customer’s budget, and budget has become a driving and restraining force of it.

Another parameter that falls under financial aspects is consumer income. Budget for a product is dependent upon income as well. The consumer’s buying behaviour is explained by the Consumer Behaviour Theory relative to terms of income. The Consumer Behaviour Theory explains how a person decides to use their available resources namely time, effort, and money, to consume anything whatsoever. This includes researching what, why, when, and where a person purchases something as well as how frequently they use a good or service (Schiffman & Kanuk, 1997). According to Schiffman and Kanuk (1997), when monetary income being considered as a resource, consumers decide the goods bundle to be purchased based on the money held in hand and income received in periodic terms.

“..... ABC offers quality products and bit high prices as well which mostly corporate customers prefer”

According to this quote of P-01, it is visible that high-priced quality products are preferred by corporate customers such as companies with high revenue. P-01 also disclosed that:

“I get jobs from household clients as well, but they are looking for cheaper products...as I know they don’t earn in large numbers, for such clients I go with normal products.”

The above extract demonstrates the two types of customers which indirectly demand wood coatings with various incomes. The preference for quality also depends on the income. Engel et al. (1994) also asserts that consumer attributes such varied income levels result in divergent demand and tastes, which will have an impact on the preferred products.

Next financial aspect that affects consumer preference is the price of the wood coatings. Kotler et al. (2013) identified that a series of environmental forces and competition affects pricing and consumer preference. Research findings of Hussain & Eman (2016) implies that consumer’s willingness to purchase depends upon price, features and benefits of it. P-07 which represented a well renowned construction company has showed up their willingness to purchase products without implicitly considering price if the product raises up benefits that match the company standards:

“The decision to pay a higher price for ABC’s UV wood coatings would be based on an assessment of the benefits they offer and how well they align with our project needs.”

After considering the benefits of UVWC highlighted by Searles (2021) and Morris (2020), industrial customers such as P-07 are undoubtedly potential customers who purchase the UVWC in future.

P-08, a freelance interior designer too agrees with the view of P-07 to pay a high price if the product offers expectational and comparative benefits:

“...would be willing to pay a little bit more for the goods if I might benefit from it”

P-06, a timber manufacturer brought up into agreement, if the new product offers benefits to the manufacturing and operational processes of the organization through labour savings, accelerating the speed of production, then the price would be a negligible aspect when making the purchase decision:

“If I get a certain labour savings and a fast production, and if I will be able to easily implement the production process, then I would not be worried about paying a higher price for that. Because we continuously improve our production line.”

P-03 furniture manufacturer revealed that most of their customers are not preferring high priced products currently owing to high inflation within Sri Lanka. That is mainly because P-03 does limited projects of customers who mostly has tight budget schedules:

“Not at all to be honest. During this time people are in tough rigid budgets. So, paying a high price is not very suitable as I see”

Based on the above literature and quotations from industrial customers, it explains how important the price is for customers to make the buying decision.

4.2.4 Localized marketing efforts can convince the customers to purchase the product

By combining marketing, sustainability and packaging aspects of the product to the specific needs of the local market, the organization can effectively convince customers to purchase the product while emphasizing marketing, sustainability, and packaging aspects that resonate with them. Localized marketing efforts are a strategic approach where businesses can tailor their marketing campaigns to connect with specific regional or local audiences. This can be done through advertising, marketing, promotion, persuasive advertising, direct marketing, and direct sales with the involvement of customizing content, messaging, and strategies to resonate with the unique characteristics, preferences, and cultural aspects of a particular customer group (Naudé & Ivy, 1999).

Most of the industrial consumers who were the participants of the interview highlighted about the marketing strategies are important in order to create the awareness about the product (Naudé & Ivy, 1999). Some of the respondents showed a little concern about marketing efforts while others were really concerned about the strategies that ABC Company can implement to create awareness among industrial consumers as well as end consumers.

As an example, P-06 who is the operations manager of a Timber manufacturing company mentioned that ABC Company can use TV advertisements as an advertising tool to inform end consumers and industrial consumers about the product:

“You might have to go for TV commercials”

This statement suggests that using TV advertisements may be necessary to educate customers about a product's features and its environmentally friendly qualities.

On the other hand, P-08, who is a freelance interior designer mentioned that ABC company should pay attention to content of the advertisement which gives an overall idea about the product. Thereby, it will help industrial customers to recommend the UV based wood coating to their clients with a better understanding:

“It is better give the overall idea and benefits via the advertisement or whatever the promotional activity”

Most of the participants in interviews mentioned that marketing tools will play a vital role in creating awareness about this product as this is not a familiar product to the industry. P-06 also mentioned that marketing is important for this product while P-07 highlighted that a combination of a traditional and modern marketing strategy would be ideal for the UV based wood coating:

“Combination of both traditional and modern marketing strategies”

The above statement of P-07 reveals that integrated marketing which involves a mix of traditional marketing methods and contemporary digital approaches to create a comprehensive and effective marketing campaign is suited.

Promotions refer to a range of initiatives and plans designed to raise awareness of and interest in a good or service among potential customers. P-01, spotted that:

“Promotions should be mostly done to industrial customers such as contractors, designers like us”

The above statements given by participants of the interview prove that localized marketing efforts can have a significant impact on purchasing behavior of consumers.

When discussing localized marketing efforts to convince customers to purchase the product, sustainability is another aspect ABC can use. As discussed in the previous chapters and theme two, UV wood coating is a sustainable product, and many participants have a positive attitude towards the concept of sustainability. Hence ABC can use it as a method of pursuing customers. Several participants have mentioned the sustainability aspect can be used as a promotion tool to convince customers.

When a question is directed to P-02 whether they would give priority to environmentally friendly products, they mentioned that it depends on how the company convince the end customers:

“Not usually. It’s based on how they market the product to customers. If they can convince the final customer about product benefits, they will prefer it more. Then we can use it because they are aware of the product and asking for it”

This can be supported by a study done about consumer perception of eco-friendly paints in Pune. According to Mishra and Warke (2017), the majority of consumers are not aware of eco-friendly paints. Some consumers had misconceptions about eco-friendly paints. According to their findings, they recommended that paint manufacturers appropriately position eco-friendly paint and raise consumer knowledge of it to clear up misconceptions and promote an appropriate image. Tejeswari (2016) mentioned although many consumers support environmentally friendly products majority of them cannot name a specific brand. The usage of eco-friendly items may be further promoted through advertising initiatives. Therefore, it can be concluded that the sustainability aspect of wood coating products should be promoted through marketing efforts of the company to both end customers and industrial customers.

Customers often react to the subjective nature of the products as conveyed through the package's communication elements such as design, strength, outer look and information cues included in package (Silayoi & Speece, 2007). P-01 highlighted about the information cues in the packaging:

“Yes, definitely packaging is important. But we would thoroughly see into the features, VOC content and stuff also which is given in package before making a purchase decision.”

Above quote proves that industrial consumers such as interior designers and even other parties are concerned about the information cues given in the packaging. For instance, P-01 has specifically mentioned about the Volatile Organic Compound (VOC) content. Generally, the VOC content in a wood coating or paint product should be low to consider it as an environmentally friendly product. (Morris, 2020)

When considering the packaging of the product, wood coatings and paints generally are offered in cans or tins. An important characteristic that also stands out is size and shape (Silayoi & Speece, 2007). Customers with varying levels of engagement may respond favorably to various container sizes. Additionally, when it is difficult to clearly see the product such as wood coatings and paints, size of packaging is crucial (Silayoi & Speece, 2007). A considerable number of interviewees have mentioned the size of packaging and how important the size is to their business operations. P-03 which is a timber work factory manager has highlighted the following:

“Based on different quantities, if packaging are made that would be easy. So, we need not purchase very high quantities or smaller quantities at once. But purchase based on current requirement.”

According to Sheng et al. (2017), the management of a company must conduct market research to find the structural design suitable for a product and optimum size the product should be packaged and marketed. The P-05, a factory manager in a woodworking company have disclosed quantitative specifications that supports the argument where size of the packaging is important:

“Some jobs will require large packs such as 5 liters. But some jobs only require 250 milliliters. So, there is no point for us to purchase a 1-litre pack for a job that only requires 250 milliliters.”

With the above input, it suggests if the UVWC is offered in customized packaging sizes, industrial customers would find it more useful and can be a crucial area for localizing the product. With the said inputs and analysis, it clarifies that packaging should be localized as per the said requirements of customers.

4.2.5 Localizing the product attributes to segment the market based on quality conscious and price conscious customers

Targeting distinct market segments by localizing product attributes has been crucial for success in today’s business world (Andaleeb, 2016). Price-conscious and quality-conscious are the two segments identified for UVWC which can broaden the product’s reach by attracting budget-friendly and premium consumers. It also allows ABC to differentiate them from competitors and allow strategic positioning. Furthermore, when consumers feel a product closely aligns with their individual needs, they are likely to develop brand loyalty (Walsh et al., 2001).

Most participants prioritized products that meet elevated quality benchmarks and are little concerned for pricing. On the other hand, a significant portion of participants stated that they pay attention to the price over the quality of the product. P-03 highlighted that preference totally depends on the purpose of customer:

“That is 50:50, there are some customers who like to purchase at a higher price and others do not. I think majority are not, they are seeking to buy at a lower price”

P-01 highlighted price conscious is not always seeking for low value product, but a worthy product:

“Caring about price doesn't mean that they always look for a cheaper product; it means they consider worthiness of purchase. Thereby, we cannot offer a low-quality product to the consumers who really concern about price”

These value-conscious consumers recognize quality, features, and benefits as a key component of the overall value equation. They aim to strike a balance between pay and return (Walsh et al., 2001). Therefore, it reveals that it is important for ABC to pay attention to quality even though the consumer is price sensitive. Providing products that meet these criteria is essential for building trust and loyalty among consumers.

P-07 who represented a construction company underlined about their commitment to quality despite the price by prioritizing high-quality inputs that influence the ultimate product:

“As we are offering a long-term property for our customers, we always try to go for high-quality inputs”

To deliver a stable property solution, the P-07 implied their products or services are designed to provide long lasting value over an extended period. This implies that P-07 values longevity, durability, and sustainability, aiming to establish an enduring relationship with clients.

Product attributes refer to the specific characteristics, qualities, or properties that define a product and set it apart from other products. These attributes encompass a wide range of elements that play a crucial role in influencing consumer preferences, purchase decisions, and overall satisfaction. The attributes of a product can be categorized as physical, functional, quality, aesthetic, pricing and environmental. Effectively communicating the right attributes is essential for successful marketing and positioning. Different consumer segments prioritize attributes based on their needs and preferences. In a competitive market, a well-defined set of product attributes can create a unique selling proposition (USP) that distinguishes a product from its competitors, attracts customers, and contribute to building a strong brand identity (Bangsa & Schlegelmilch, 2020). Localizing attributes during design and development of UVWC can address unique preferences. This approach acknowledges consumer tastes, regulatory standards, environmental considerations, and cultural nuances can vary regionally.

P-01, a freelance interior designer, spotted that the attributes of the product should be in line with their expectations:

"In terms of specs, we need coatings that meet our performance expectations. Our customers demand durability, resistance to wear and tear, and easy maintenance. A localized approach should prioritize these factors to ensure customer satisfaction."

This statement underscores the critical importance of aligning the design and development of UVWC with specific performance standards and demands of both industrial and end customers. According to aforementioned literature and quotes, localizing product attributes to divide the product into two markets will boost reach and preference.

5. Conclusion

The primary objective of this study is to understand whether there would be a potential consumer preference by industrial customers for the UV wood coating in Sri Lanka. The study adopted a qualitative methodology through the case study research strategy. The Consumer Preference Theory was used as a theoretical lens and guidance from theories such as Consumer Behaviour Theory and Theory of Buying Behaviour from literature was also utilized to support the findings. Eight managerial-level respondents in different organizational roles were interviewed. Based on the identification of the interviews, it comes to conclusion that all informants are willing to test the new product, hence **there will be a potential consumer preference for the UV wood coating**. Most participants highlighted the importance of product benefits, the vital role of marketing that has to be played in promoting the product, packaging, and positioning, and the aspects such as sustainability as strategies that would be preferred for localizing the product.

5.1 Theoretical Implications

This study tends to contribute to the Consumer Preference Theory (Samuelson, 1948) and confirms the rational behavior of consumer decision making through considering budget constraints and product preferences. It confirms that consumer gets constrained for a revealed product based on financial limitations. However, this study reveals that a rational consumer would be willing to pay a bit higher price than the existing price for a new product if it yields more benefits and brings out cost savings in future.

This study also extends the knowledge to related studies that focus on market behavior and strategies of Indian paint, examining consumer performance, satisfaction, brand name/symbol, and

loyal product behavior (Dada, 2021) and the study conducted by Ochola (2015) aimed to identify the strategies used by Kenyan paint manufacturers in entering the foreign market.

The main contribution made by this study realizes the country-specific strategies a company should follow when introducing a new product to a new market and it is targeted for wood coatings industry. To the best knowledge of researchers, none of previous studies has been conducted considering the localizing strategies for wood coatings. Thereby this study adds new knowledge to the existing body of literature.

5.2 Practical Implications

The practical implications of this study will be aimed at ABC company to localize and customize different aspects related to launching the product to Sri Lankan market. A direct marketing and mass marketing combined marketing strategy should be employed. Direct marketing should be utilized to convince industrial customers by highlighting the advantages, and cost savings that the product could yield to them, and mass marketing should be used to make the end users aware of UV wood coating. By stimulating the preferences of end users, it will be easier for industrial customers such as construction companies to recommend UV wood coating to end customers when finishing orders. Such that both end users and industrial customers need to be notified separately through marketing campaigns. To convince end users, newspapers, TV advertisements and testimonial advertising campaigns such as celebrity or influencer-endorsed commercials are recommended. Such influencers have a wide capacity to touch customers due to the image they have built. According to the research findings and the literature, it highlights that branding is a crucial component of the product marketing campaign. SLK brand of ABC company holds a good market share not only in Sri Lanka, but also in Bangladesh and other parts of the world (ABC, 2022). Therefore, it is recommended that the company should use the current brand name SLK by ABC when introducing the new UV product to the market.

The research findings have stipulated that consumers prefer a goods bundle only by considering the budget and their disposable income. Industrial consumers are constrained by the budget of end user. The findings also highlight the two kinds of end users; quality conscious, who are not considering the price when making orders and price-conscious, who only prefer a product that is sheltered within their budget. Hence the company should cater to these two kinds separately. The company should segment the market with a budget price and exclusive price for UV wood coating and differentiate the quality of the product by changing pigments and quality standards. Hence, the company should introduce two UV wood coating products under two prices: one budget price and the other exclusive price by differing quality and other changeable product attributes.

After-sales service is one of the factors highlighted by many respondents which has stimulated them to continue buying from ABC company. Therefore, emphasizing after sales service will be a strategy for the company to increase sales and retain customers for the product in the future. The current after-sales strategy should be re-structured by the company and a separate team should be allocated to handle after-sales service and follow-up when products are sold to customers. The after-sales team should maintain a thorough connection between customers until they digest UV wood coating well.

As highlighted by Searles (2021), UV wood coating possesses environmentally friendly attributes and from this research, many participants are willing to buy an eco-friendly product. Hence ABC company should emphasize the sustainability aspect in their marketing campaign. By highlighting the eco-friendly aspects of UV wood coating such as having low VOC emissions, the company can target environmentally conscious customers. This strategy caters to the rising trend of eco-awareness and establishes the brand as a trustworthy and socially conscious brand.

Research findings have stipulated that various packaging sizes are important for industrial customers. The needs of the customers are unique depending on the project requirement. Large orders need large packs or tins of wood coating and small orders need small tins. Having a standard size for

all orders results in wastage. Hence introducing wood coating in different package sizes can benefit industrial customers to reduce wastage.

5.3 Limitations and avenues for future research

The current study seems to have a few limitations such as the focus on one case or organization, focusing on a limited number of participants in collecting data. Future studies can adopt multiple case study research strategies where several organisations can be studied and more participants can be interviewed to improve the richness of data. Furthermore, future studies could also utilize data triangulation where data from even secondary sources such as company annual reports, government reports, and other archival sources of secondary data can be added.

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Exploring international partnership strategy for the logistics industry: The case of ABC

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Abstract

The primary aim of this study is to determine the factors affecting joint venture agreements undertaken by international businesses and to provide recommendations in selecting a suitable country of operations and partners. For this purpose, a single case of ABC, a logistics company in Sri Lanka has been selected. A qualitative methodology has been adopted and data has been collected from five participants. Furthermore, thematic analysis was used in order to analyze the data gathered through interviews. Accordingly, it was found that about the relevance of JV for international expansion, factors hindering the success of joint ventures, the importance of selecting a reliable JV partner, the significance of cultural distance on expansion decisions and how far internationalization via joint ventures is effective. Finally, the study's implications are explored both theoretically and practically, strengthening the validity of the research by applying its findings to real-world situations and adding knowledge to existing literature. To gain a deeper comprehension of the practical ramifications, the study suggests a matrix that guides firms to select reliable JV partners and countries.

Key words: Cultural Distance, International Joint Ventures, Internationalization, Logistics Industry

1. Introduction

1.1 Background to the global and local logistic context

The lifeblood of economies is the logistics industry, which has experienced significant worldwide growth in recent years (Sezer & Abasiz, 2017). In 2022, the size of the global logistics industry was estimated to be close to \$9.96 trillion USD. The logistics industry is expected to develop between 2023 and 2028 at a CAGR of 6.3%, reaching a size of around USD 14.37 trillion by 2028. This growth is expected to be fueled by the rapid expansion of e-commerce and improvements in supply chain management (Global Logistics Market Report and Forecast 2023-2028, 2023).

ABC PLC, a leading logistics provider, is outsourcing its operations to third-party logistics providers to reduce storage costs and free up capital. The Global Logistics Market Report (2023) predicts growth due to technological advancements, integration of biometrics, Bluetooth, autonomous vehicles, GPS, drone deliveries, and increased global trade agreements. Joint venture agreements significantly impact the logistics industry, making it a lucrative and global market with potential for growth and innovation. The National Export Strategy (NES) - Sri Lanka Export Development Board (2022), outlines a five-year project to enhance the logistics sector in Sri Lanka, aiming to make it a leading maritime, logistics, and distribution hub in the Indian Ocean. Sri Lanka's strategic location in Southeast Asia, near

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emerging markets, has made it a significant logistical hub. Port-related services have increased overall, with total container handling increasing by 10.6% in 2016. Modern technology has revolutionized the logistics sector, offering business-to-business, business-to-consumer and e-commerce services. Several leading logistic companies in Sri Lanka, such as A P L Logistics Lanka PVT LTD, A R Freight Care Services PVT LTD, Aitken Spence Cargo PVT LTD, Antron Express PVT LTD, Aramex Lanka PVT LTD, Colombo International Container Terminals LTD, and DHL Global Forwarding Lanka PVT LTD, are market leaders in the industry. Local logistic companies are increasingly forming international joint ventures to expand their business worldwide. Apart from global expansion of the business, most of the local logistic companies focus on sharing international technology and resources which is indeed a primary motive of forming Joint Ventures. Although Sri Lanka appears to have an ideal geographic location to serve as the center of the region, it has not taken the necessary measures to fully take advantage of this Geopolitical significance. However, Sri Lanka's ambition to serve as the center of the region is hindered by competition from regional players and inadequate infrastructure development. Regional ports like Dubai, Singapore, and the recently built "Sagarmala" Port in India compete with Sri Lanka's port infrastructure and maritime trade. By stalling the nation's feeder network, India's aspirations for liberalizing its shipping restrictions may lessen Sri Lanka's competitiveness as a regional hub (Finnigan, 2019). To retain its global market position and brand name, local logistic companies tend to move into global markets and form international joint ventures to expand their business activities in respective countries.

1.1 Company Background

ABC Logistics Company, a monopolistic player in the Sri Lankan logistics industry, primarily focuses on third party logistics (3PL) services. According to Gupta et al. (2011), 3PL service provider is a company that supplies and/or coordinates logistics functions across multiple links in the supply chain, acting as a facilitator between seller/manufacturer and buyer/user. ABC also caters to international trade needs such as warehousing, free zone logistics, project logistics, e-commerce, logistics related engineering solutions, oil & gas logistics, shipping, freight forwarding, ship operations, marine services, and aviation. ABC's coverage extends to Southeast Asia and Indian Subcontinents, particularly in India, Hong Kong, Indonesia, Bangladesh, Malaysia, Myanmar, and Maldives. However, the company has faced internal problems in venture creation with host country partners, including legal disputes in Bangladesh and the US. This study aims to explore the reasons for these failures and suggest recommendations for selecting reliable countries and venturing partners based on the company's internal structure.

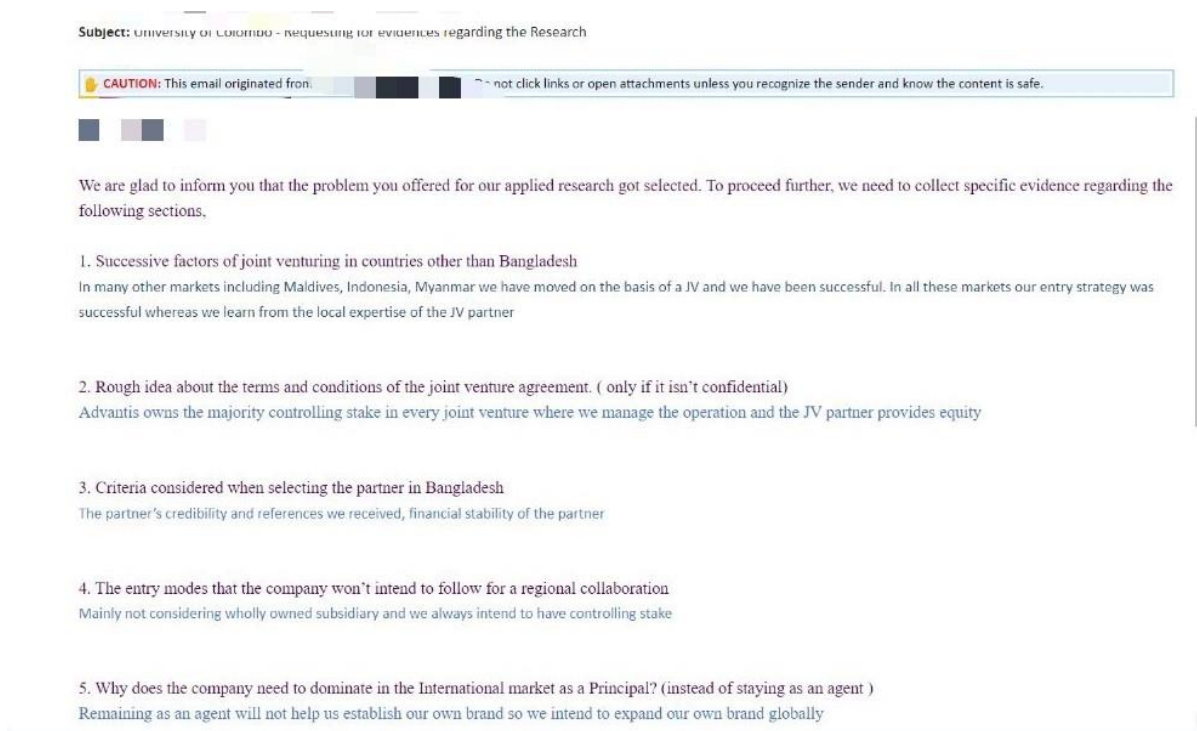
1.2 Research Problem

ABC PLC, a logistics company, focuses on establishing its brand in Southeast Asia and the Indian Subcontinent through joint ventures. The company's partners are spread across India, Hong Kong, Indonesia, Bangladesh, Malaysia, Myanmar, and Maldives. However, the company faces research gaps in forming successful partnerships with host countries and has identified two main incidents that explain its shortcomings in venture creation. The company's research gap is evident in its business practices.

ABC Company faced a conflict with a regional agent in Bangladesh in 2021 due to incompetence in their respective visions, leading to a decline in profits and legal action. The COVID-19 pandemic had a minor impact on profits, but the general manager identified Bangladesh as the primary cause. The company's performance gap was evident due to the controversy surrounding finding a feasible regional partner for the joint venture. The General Manager of ABC Company emphasized that the problem arose from misconducts in capital introduction by the Bangladesh venturing partner.

Figure 1

The pilot study sent to the general manager



ABC Company faced difficulties in entering the US market due to a lack of focus on country selection criteria and inadequate market analysis. The company abandoned its agendas in the US before proper establishment, and data related to the US market has not been published in company reports. This creates a gap between actual and desired performance, impacting future performance.

ABC targets to expand operations in Thailand and Cambodia. Therefore, this study aims to offer recommendations for ABC Company before their future expansions.

1.3 Research Questions

- 1) What are the reasons that cause to fail joint venture agreements in ABC Logistic Company?
- 2) What are the proposed recommendations to be followed when selecting a reliable country and a venturing partner?

2. Literature Review

2.1 Internationalization and Joint Ventures

Internationalization exposes companies to an array of new challenges, including deciding on appropriate arrangements for organizing their business activities in foreign markets (Benito & Welch, 1994). According to Welch and Luostarinen (1988), the process of becoming more involved in international activities is how internationalization is defined. In the current business environment, maintaining a notable global presence ensures the business's dominance over its rivals. In such, forming strong networks with foreign stakeholders plays a crucial role in providing efficient services in the international market. Likewise, Erramilli (1990), reveals that businesses often expand internationally through strategic alliances with vendors and clients. Moreover, business should make a choice between cost containment and local responsiveness when it decides to enter new markets (Business Bliss Consultants FZE, 2018).

This paper particularly focuses on the role of Joint Ventures (JV) in internationalization process. Joint ventures involve two or more legally distinct organizations, each of which actively participates in the decision-making activities of the jointly owned entity (Geringer, 1991). Firms enter JV agreements to create new products and services or to enter new foreign markets (Beamish, 2008). According to Beamish and Lupton (2009), to obtain economies of scale, joint ventures allow businesses to leverage each other's complementary resources and competencies. An international joint venture (IJV) is a business entity with at least one parent headquartered outside its country of operation or significant operation in multiple countries which gaining strategic importance in international business (Geringer & Hebert, 1989). According to Beamish & Lupton (2009), local partners in IJVs assist international companies in new business practices, regulations, and reputation enhancement. Past literature supposed two extremes of IJVs as equity JVs and nonequity JVs. Beamish & Lupton (2009) have highlighted certain criteria which distinguish equity JV from non-equity JV. Accordingly, JVs are not the only way to gain access to another firm's resources, they are frequently preferred over licensing, contracting, and other nonequity strategic alliances. In contrast to nonequity alliances, the capital invested JV signals higher partner commitment.

As per Stewart and Maughn (2011), the joint venture may consist of a written contract outlining the parameters of the agreement. Today, equity joint ventures are formed by incorporating an entity in which each party or one of its specifically funded subsidiaries owns an agreed-upon share, or by purchasing ownership in an already-existing entity. The parties may also sign auxiliary legal contracts that cover aspects of the endeavor in addition to the definitive agreement in circumstances where to obtaining intellectual property rights. According to Thresh (2018), benefits of a successful joint venture include access to new markets, distribution networks and sharing knowledge and expertise without spending excessive amounts of capital.

As per Ankura (2021), at least half of JVs fail on one or more of following counts. In general, 10 years is the median lifespan of JV, 31% ending within five years, 67% misaligned owners, 42% negative outcomes, and 49% failure to meet partner expectations. Joint ventures often face compatibility challenges, financial constraints, issues with the Joint Venture Agreement, and varying profit/outcome expectations. Other reasons for joint venture failures include parents' inability to work effectively, friction, delays, and additional costs, lack of support, changes in ownership, disagreements on strategy, and financial models etc.

According to Child (2005), partnership should be chosen based on complementarity because cooperations tend fail due to a lack of complementarity between parties or a misinterpretation of expectations. According to Kelly (2002), choosing partners wisely requires taking compatibility into account. Partners should be committed, which implies that both parties are dedicated to achieving their goals. Further to the foregoing discussion, ABC Company should carefully select a reliable country and venture partner for internationalization through joint ventures, considering factors like organizational culture, legal background, and sociocultural environment, and carefully evaluate potential partners. According to the study of Roy and Oliver (2009), the host country's legal environment influences IJV partner selection criteria, with negative views of the rule of law affecting appropriation and coordination costs. These matters also act as a mediator in the interaction between partner-related factors and perceptions of the rule of law in the host nation.

2.2 The Uppsala Model

As explained, the objective of ABC logistic company is to achieve regional expansion in the form of joint ventures, which can be explained through the theory called 'Uppsala Model'. The model explains how a local firm enters foreign markets at the initial stages and how it gradually dominated there as a Multi-National Enterprise (MNE). In particular, a firm initiates internationalization by receiving foreign orders, increasing exports, forming relationships with overseas distributors or agents, and finally establishing a sales organization to sell locally manufactured products (Johanson and Vahlne, 2017). By using the Uppsala model, this study tries to understand the reason why ABC Plc failed during internationalization in USA and Bangladesh. Further, the model suggests optimal mode for market entry by analyzing company's resources, cost and risks (Johanson & Vahlne, 2009).

To get a better understanding about the model, it is important to know the assumptions well.

1. Heterogeneity and the Network View of the Business Context

As per Penrose (1959) and Wernerfelt (2013), global enterprisers can distinguish from each other based on three heterogeneous aspects respectively combination of resources, nature of product and nature of firms. Experiential learning and historical reliance are the causes of this heterogeneity. According to Agarwal et al. (2009), heterogeneity brings competitive advantage to a firm via knowledge which has two extremes as objective knowledge/market knowledge and experiential knowledge. When firms expand to new markets, objective knowledge improves as risk associated with new market entries are reduced. However, experiential knowledge depends on the context of a particular country (Magda Górska, 2013). Moreover, this explains the existence of idiosyncratic relationships and networks, where goods, money, and knowledge are exchanged (Johanson & Vahlne, 2017).

Likewise, ABC Plc's failure in the USA and Bangladesh can be attributed to a lack of focus on objective and experiential knowledge. Despite having the access to East Asian countries, ABC Plc's failure in USA can be assumed due to information asymmetry and limited experiential knowledge. Besides, company did not get the advantage of its experiential knowledge in the case of Bangladesh.

2. Risk, Uncertainty, and Partial Ignorance

Ansoff (1965), suggests that managers perform under conditions of uncertainty and incomplete knowledge since the future cannot be predicted. Therefore, Uppsala model highlights when a decision is taken, risk, uncertainty, and partial ignorance are all associated with resources. A successful business adapts to changing environments through technological advancements, value chain performance improvement, partnership adjustments, and relationship changes (Nightingale, 2008; Sarasvathy, 2001; Weick, 1979). In addition, the model has developed based on change variables and state variables. Further it suggests that resource allocation decisions are made when there's a positive trade-off between benefits and downside outcomes. It identifies two changes: intermittent decision processes and continuous knowledge development processes, which influence each other through their impact on state variables (Johanson & Vahlne, 2017). Given the unpredictability of external environmental factors, ABC Plc faces a high risk in its joint venture formation due to inadequate knowledge regarding international markets. Even if it predicts correctly, the interdependency of each component makes it more difficult to analyze. Therefore, it is pivotal to analyze global environment variables before entering a new market.

According to the original model of internationalization, ABC Plc might adhere to the following process in regional expansion. The company can gradually initiate operations by no regular export activities, then export via independent representatives (agent), thirdly sales subsidiary, and lastly manufacturing. This progress depicts how existing business practices evolve as a result of experience. The company's market experience varies from minimal to extensive, with limited information in the initial phase. As it progresses through the third and fourth stages, it gains a more diverse and extensive market experience (Johanson & Vahlne, 1977). Alternative perspective explains that greater the 'physic distance', higher the success rate in market entry. Psychic distance, such as language, culture, and political systems, can inhibit or disrupt information exchanges between a firm and its market (Johanson & Wiedersheim-Paul, 1975). Despite, Johanson and Vahlne (1990) argue that internationalization is not a concept of psychic distance but rather the outcome of existing and expanding business relationships.

2.3 Hofstede Dimensions Theory

The Hofstede Cultural Dimensions Theory is the framework that is used to evaluate the traits of culture, distinguish between various national cultures, and evaluate the influence of each on a business environment Hofstede (1980). The theory is frequently utilized to comprehend etiquette and enhance

communication between cultures which consists of 6 dimensions. Originally individualism and collectivism, power distance, uncertainty avoidance, and masculinity and femininity Hofstede (1983). And the other two dimensions; long-term, or short-term orientation and Indulgence and Restraint were added later to the theory.

According to Hofstede, culture is the collective cognitive development that separates members of one group from another (Hofstede, 2001). As per Barkema and Vermeulen (1997), culture refers to a set of shared values that solves problems with external adaptation and internal integration. External adaptation involves establishing organizational goals and strategies, managing opportunities and risks, creating group interaction, shared understanding, determining social norms, ultimately shaping individual and organizational behavior. The study especially focuses on national culture, which refers to the ideals, attitudes, and thinking patterns of one group over another (Hofstede 1991). Previous study by Barkema and Vermeulen (1997), emphasized IJVs entail unique risks due to cultural differences, and using Hofstede's six dimensions, variations across cultures can be compared based on national cultural values. With reference to Hofstede's theory, ABC Company can select a reliable country and venturing partner by analyzing and ranking national cultural attributes.

Kogut and Singh (1988) introduced cultural distance to explain entry mode selection, developing a Euclidean distance measure based on Hofstede's multidimensional culture paradigm which combines cultural disparities into a single index. Thus, Hofstede's cultural dimension encompasses the concept of cultural distance, which refers to the cultural disparity between host and home nations. When businesses internationalize, they first grow to culturally and/or geographically adjacent nations before progressively moving to more distant cultures and locations as they gain experience abroad (Beugelsdijk et al., 2017). Moreover, internationalization creates cultural gaps between host and home countries, which ABC Company should consider when proposing strategies for prospective business moves. Previous research has found that differences in the cultural backgrounds of the partners are a threat to the survival of IJVs. Furthermore, when the cultural distance between the expanding firm's home country and the host country is large, the chances of IJV survival are lower.

Next examines the business culture's influence on the performance of IJVs. Organizational culture refers to the shared fundamental beliefs that a group learns to address conflicts with external adaptation and internal integration. (Schein 1992). Past literature suggests national culture influences organizational culture Aguilera and Jackson (2003), Hofstede (2001), Ansah and Louw (2009). International firms often face failure and challenges due to insufficient cultural considerations (Adler, 1991), as well as shifting business practices in host nations also affecting their performance and success (Ansah & Louw, 2009). Therefore, organizations must adapt their cultures to fit those of their respective national policies. Similar vein in this study, the ABC Company's organizational culture is largely influenced by its home country's culture. Therefore, the firm must thoroughly research host countries' culture using Hofstede's dimension theory when choosing joint venture partners from another country.

2.4 Critical Success Factors

According to Carbajo (2022), not everyone can be a successful business partner and to avoid any potential problems, a comprehensive analysis is required when selecting reliable partners. The compatibility of each partner accounts for 90% of a partnership's success. The characteristics that considered to select successful venturing partnership can be defined via the concept called Critical Success Factors (CSF). The CSFs are those few key areas that must be performed well for the organization to outperform its competitors (Sa, 1988). As per the Rockart (1979), CSFs are the limited number of areas in which outcomes, if satisfactory, will assure the organization's successful competitive performance. If outcomes of these areas are insufficient, the organization's efforts for the time period will be under performed. These factors influencing a firm's success are influenced by its industry characteristics and the tasks that a venture expected to perform (Porter, 1980), (Pralhad, 1987). Geringer (1998), suggests that the strategic context of the parent company and the proposed venture, along with the success determinants of an IJV's competitive environment, influences the relative importance of selection criteria.

According to past studies, the relative company size and equal power positions are critical successive factors when establishing IJVs (Adler and Hlavacek 1976), (Daniels, 1971). Usually, businesses seek partners with similar sizes because it assures corporations by driving similar importance to the partnership along with same capabilities. Moreover, technical skills and resources of partners also play a major role as a CSF in partner selection. Besides, there are task-related criteria, the elements that directly impact the operational feasibility of a proposed enterprise that are essential for a business's competitive performance. These can be physical, intangible, human or nonhuman. (Geringer 1988). Mutual dependency is another CSF used to identify a reliable JV partner which involves seeking a partner with complementary technical skills and resources. This allows each partner to concentrate resources in areas of greater competence while diversifying into attractive but unfamiliar business areas (Kottolli, 2002). The CSFs stated above emphasize the significance of analyzing CSF for IJVs.

3. Research Methodology

The current study has adopted a qualitative methodology under an inductive approach (Malterud, 2011) similar to related studies (Cavusgil, 1998; Gammelgaard & Flint, 2012). The research strategy adopted would be the case study strategy study aims to find insights about ABC Logistics Company's international partnership strategy, identifying a research gap in negotiating mutually beneficial agreements for overseas logistics services. The company has failed in Bangladesh and the USA and needs to develop more successful joint venture agreements for future expansion. Data collection involved semi-structured interviews with industry experts to obtain knowledge on market expansion policies and the suitability of joint ventures in the logistic sector. The interviews were in two phases: the first phase will involve relevant parties from ABC Logistic Company, including the general manager, and regional head of South Asian expansions, to identify the company's perspective and understand recommendations for the problem. The second phase will involve industry experts, targeting global marketing managers in related organizations and industries to ensure the study is free from bias.

ABC Logistics' cross-sectional study offers a comprehensive overview of its operations, strategy alignment, and operational efficacy, allowing for real-time analysis of trends and challenges. This method requires fewer resources and offers immediate strategic insights, particularly for the rapidly evolving logistics industry, enhancing its usability and comparison capabilities. A case of single logistic company has been chosen for this study focusing on several aspects. As such it offers a unique context which allows in depth analysis and ensures data consistency by paving way to a comprehensive case study, also researchers can control variables with less complexity.

As per the initial plan, data were expected to be collected from three global marketing managers from the organization where the problem exists and four from other international organizations. Data were collected purposively from global marketing managers. However, the study reached data saturation by interviewing five respondents in total. The majority of respondents will be representatives of the external environment of the ABC Company, aiming to provide an unbiased solution to the problem. Most interviews were conducted online through Zoom online platform.

The collected data was analyzed based on the thematic analysis method suggested by Braun and Clark (2006). The method involves six steps: familiarization with the data, generating initial codes, generating themes, reviewing potential themes, defining and naming themes, and producing a report.

4. Finding and Discussion

The following findings were made based on the first research question. In which this study is trying to understand the factors affecting the failure of joint ventures

4.1 Relevance of JV for the International Expansion

Experts suggest that while JV arrangements are not always the best method for internationalization in the logistics industry, it could be the most relevant approach depending on the market and company

characteristics. Thus, the suitability and success of the operation are dependent on the aforementioned factors mentioned by one of the interviewees.

“A joint venture is one of ideal method for companies in Sri Lanka to enter international markets due lack of experience in cultural differences. Despite geographical proximity, countries have distinct cultural attributes, joint venture partners in the overseas market can aid in our journey. A local partner in the overseas market can share expertise and expedite matters, making it beneficial for exploring unknown territories and markets. Additionally, a joint venture partner may be able to bring necessary capital and share risk allowing for a more successful venture.”

The JV success factors can change depending on the context and industry. What is effective in one sector or market might not be readily applicable to another (Kogut, 1988). An expert of industry also has the same view as follows,

“I won't say that JV the best way to go but what you need to understand the context of the market, and then define entry strategy accordingly.”

According to literature when selecting a country for a joint venture (JV), businesses consider combination of market, human resource, and political stability focusing on market size and growth potential. It is critical to have access to capable local labor. The success of the JV can be influenced by its capacity to recruit and sustain talent (Hitt et al., 2018). As per the expert in the field,

“We need to know how potential that market is, and how can add value?”

“In the people side, does skilled labor is easily available or do we need to train?”

“Then the political stability, it also crucial because that has impacted us like in Myanmar.”

4.2 Factors hindering the success of Joint Ventures

The core reasons for JV failure identified namely, mismanagement of objectives and expectations without proper integration between partners and cultural misalignment. Misaligned partners' objectives can cause conflicts, weakening joint venture performance. Effective communication, dispute resolution, and collaboration are crucial for handling cultural differences in international joint ventures (Harris & Moran, 1987). In this case, the opinion of interviewees regarding JV failures have listed below,

“Selecting partners with similar logistics knowledge and expertise will not drive mutual benefit. So, what we seek in our partners is something that we lack. It's important to communicate our expectations and operational guidelines in written form. So, one of the biggest issues I see in failure of joint vendors is lack of understanding between partners and the selection of wrong partners.”

Whilst conducting business and managing risks, the attitude toward the next step is crucial. Here is another statement made by an expert on JV success.

“If you don't manage your partner right from day one before forming new JV without clear explanation of expectations, it's going to become very difficult. So, I see misaligned expectations as one of the key reasons for joint venture failure. When you are going into JV, you will have to define your culture to suit the local market context. A severe disparity in their cultures is crucial for the success of the joint venture.”

Other than that, JV success also relies on strong connections and trust between partners, which can help overcome instability, uncertainty, and disputes (Luo, 2002).

“Relationship management is crucial for successful market analysis to identifying potential partners and ensuring a successful joint venture.”

4.3 Internationalization via Joint Ventures

This research study evaluates joint ventures as an effective expansion strategy for internationalization, considering direct expansion and step-by-step approaches. Johanson and Vahlne (1977) recommended

gradual expansion as the most reliable approach for internationalization, as it allows firms to accumulate market knowledge before making commitments which reduce risk and following shows experts' opinions on it.

"I suggest step-by-step approach to avoid risk especially for B2B kind of businesses."

"When you are targeting multiple markets at once, direct expansion deviates focus, so it's better to follow a step-by-step process, starting with one area and gradually expanding to other regions." According to Eriksson et al. (1997), gradual expansion facilitates firms to gather market knowledge over time by entering with primitive strategies which allow firms to be benefited from experiential knowledge. According to some industry experts,

"Market knowledge is crucial for understanding market size, competition, and GDP. Because it helps test logistics spend, determine market needs, and understand market dynamics, including people's behavior, problems, and needs before entering a market."

Furthermore, Brouthers and Nakos (2004), suggest gradual expansion for small and medium-scaled enterprises to achieve global expansion with limited resources and Uppsala model aid them to expand with smaller commitments. Interviews made below statements regarding that,

"When you enter multiple markets at once, you have restrictions on resources and capital. This is the risk of getting to a direct expansion with limited resources. So, step by step approach is more feasible and more long-lasting than getting into a market full blown."

Based on those findings, it can be concluded that gradual expansion can recommend over direct expansion in many circumstances.

Secondly, this paper brings forward recommendations to select a reliable venturing partner based on the second research question.

4.4 The importance of selecting a reliable JV partner

The study emphasizes the importance of selecting a reliable venturing partner several times, particularly in international expansion. Interviews with ABC logistic company's regional expansion manager underscore the significance of choosing the right partner as follows,

Joint venture success depends significantly on the partnering firm. If you get in well, both parties get mutual benefits. It also depends on what sort of involvement and how you define the partner. Sometimes the partner is silent but then there're partner who's get involved and there is a significant stake given."

According to literature, compatibility of goals, national or/and corporate culture, organizational size, capabilities, and longstanding cooperation of partners ensure JV success while mutual trust assist partners to conduct business smoothly by avoiding conflicts and uncertainties (Kale & Singh ,2007; Luo, 2002; Geringer, 1991). Further, partnerships with similar-sized companies are recommended due to their equal bargaining power positions and shared business importance (Daniels 1971). Partner selection is crucial in joint venture formation, influencing skills, resources, operating policies, and complete viability. Because the access of intangible assets, technological know-how, financial resources, and workforce are determined by the partner. As per Geringer (1991), Partner selection is crucial in joint venture formation as it determines the access to skills, resources, operating policies, and complete viability. In corporate with the fact interviewees declared,

"To consider us as a good partner, other party will expect us to bring something they don't have. It might be technical how – know, financial resources or reginal client connections who can strengthen the supply chain etc."

4.5 Significance of cultural distance on expansion decisions

Cultural distance plays a crucial role when making global expansion decisions and firms tend to choose culturally intimate markets for international expansion (Kogut and Singh, 1988). One of interviewee proven it as below,

“It’s challenging to promote destination in European markets compared to the promotions in Asia.”

Another industry expert highlighted the importance of understanding the physical and cultural proximity in the expansion decisions. Accordingly,

“Cultural distance should prioritize as it impacts the success of operations overseas. In such, physical proximity and cultural distance are important distinguished properly. Say for an example, European market is both culturally and physically distant with us, but some Asian markets are physically closed but culturally different. Thus, cultural adaptation is something crucial.”

Meanwhile, another interviewee emphasized the cruciality of physical distance.

“Sri Lankan companies are considering the Asian market over Europe as it drives lower transportation and operation cost due to the close proximity.”

Moreover, Barkema and Vermeulen (1997) found a negative relationship between the cultural distance and the performance of IJVs which is further explained by an industry expert as follows,

“Cultural distance obviously impacts operations in overseas markets. Invading or trying to change a local corporate culture can lead to negative consequences, such as affecting employee morals, performance, and customer loyalty. Non-adherence to cultural differences can result in customer refusal or boycott your products.”

Usually, firms adapt organizational strategies and management practices in accordance with the cultural dimensions (Hofstede, 1980). An interviewee’s thoughts regarding to such matter is,

“Cultural adaptation benefits businesses in cost and operation, as well as customer and supplier management. Understanding local culture, selecting suitable personnel, and adapting to it is crucial for success in foreign markets. This understanding and ability to adapt to different cultures is key to business success.”

5. Implications

The Uppsala model served as the primary foundation for this study, with Hofstede's Cultural Dimensions serving as a significant supportive theory. According to Johanson and Vahlne (1977), gradual expansion is recommended to internationalization and the discussion made in previous chapter confirmed the validity of step-by-step approach for regional expansion over direct expansion. The countless number of research was based on this model when explaining internationalization process of various businesses models.

There between, the related study on implications of business networks and entrepreneurship provides broader and precise understanding regarding the gradual expansion by emphasizing connectivity of relationship building among business networks towards foreign investment behavior. This study extends its knowledge aligning Hofstede's Cultural Dimensions to strengthening the principal theory (The Uppsala Model) focusing further on experiential learning through national culture analysis. Moreover, the application of Uppsala model to logistic industry cannot be found in existing literature, and this paper expanding the prevailing knowledge on internationalization by validating the incremental behavior of logistic firm towards foreign investment in a step -by- step approach. Not only, but the study highlights how important it is to comprehend and adjust to the national and corporate cultures of the host country when the logistics industry goes through an internationalization process which broaden the theory making affiliation with Hofstede's Cultural Dimensions. It was introduced as a risk management tool in foreign markets to support the main theory.

5.1 Partner and Country Selection Process

The ultimate goal of this study is to develop an accurate matrix which guides firms to establish successful IJVs. Based on findings, the incompatible goals, in capabilities and lack of trust between partners are identified as primary reasons to impeding JV success. Henceforth, five stage matrix will

be outlined to consider before selecting a venturing partner. Accordingly, the first stage is to develop general selection criteria for selecting partners. Then the company should evaluate such factors to shortlist potential candidates. Thirdly, filtering the most competitive partners based on company attributes. Fourthly, choosing the best suit partner and finally, building up connection with selected partner.

In terms of determining general selection criteria, the alignment of corporate and strategic objectives between partners must be considered and selected group of candidates must share similar vision, mission, corporate values, business ethics, and standards as them. Moreover, partners should have similar capabilities and expectations because it ensures partner commitment and future earnings.

In the second stage, the organization should map out current and potential strengths candidates considering the financial strengths, resources availability, experience, and reputation in the local market. Thirdly, critical successive should be evaluated. These factors are unique to the company, depending on organizational objectives and expectations, but mutual trust and mutual benefits can be considered as general for every organization. Finally, the firm can select the most reliable partner after a proper evaluation of CSFs and entering to contact with that selected partner.

When it comes to country selection, initially the researcher recommends to develop a clear set of selection criteria considering factors such as entry barriers and the perspectives regarding cultural, economic, legal, and political status of the country. Then, these should systematically evaluate and compare each attribute among potential partnering countries. For the evaluation, the organization can obtain vital data about market's size, degree of competition, GDP, and investments by performing test research in the target markets. After that the company should carefully assess the industry's need prior to market entry. This requires knowledge of customer behavior and market dynamics. Therefore, the organization must personalize its strategy to analyze customers' issues and needs. Next the researcher recommends selecting a potential partnering country by considering growth rate and population as the two major indicators. Because the untapped potentials are the key drivers of expansion.

The outcomes of the present study addresses gaps in existing literature focusing on three main aspects. Firstly, the study fills a notable gap signifying the Uppsala Model to logistic industry while providing insights of effective implementation of incremental internationalization strategies specifically to the logistic industry. Secondly, the integration of Hofstede's Cultural Dimensions offers a more profound comprehension of the function of culture in internationalization, an aspect that was frequently disregarded in previous studies centered on the Uppsala Model. Finally, the structured partner and country selection matrix; in comparison to earlier studies, the five-stage matrix proposed for partner and country selection offers practical tools that improve the comprehension of the internationalization process of the businesses while offering a more workable blueprint.

5.2 Limitations of the study

This study provided a comprehensive idea on factors to consider in partner/country selection. However, there can be cultural bias when specifying selection criteria where criteria which work in the western cultures might not work in the non-western cultures. Also, selection criteria can be subjected to change given the changes in dynamic political and economic conditions in each country.

The generalizability of the findings from one case study to all industries and scenarios can be challenging because selection criteria and recommendations can be changed based on company size, goals of the organization and other variables. Also in qualitative research, there can be inherent challenges such as response bias where opinions of respondents are biased to provide socially acceptable/ desirable answers to questions. Therefore, a mixed method approach would yield more reliable and robust information.

5.3 Future research directions

Given the above implications and limitations, future research can focus on addressing gaps in the existing literature on the use of Uppsala model and refine methodologies for a comprehensive outlook on the subject. Also, studies can expand towards the application of strategic decisions in international

business contexts. Partner and country selection criteria can be identified with respect to different cross-cultural studies where culture specific criteria can be established. Even though this study is conducted as a qualitative study with a specific case study, research can expand towards longitudinal studies which provides insights into how different selection criteria can evolve over time.

Another key research area in the extant literature is on emerging technologies such as artificial intelligence, blockchain, big data etc. The impact of such emerging technologies on partner and country selection criteria will be significant to the extant body of literature. By trailing towards these research directions, scholars can develop a more effective set of strategies on international partnerships contributing to successful global businesses worldwide.

6. Conclusion

The corresponding study which has been undertaken on ‘exploring international partnership strategy for logistics industry’. The logistics company is experiencing joint venture failures in several markets, which is the research gap addressed in this study with reference to the variables that impede the success of joint venture operations. Moreover, the study is expected to suggest ways in which to avoid such failures in future expansion and the ultimate objective is to propose an accurate matrix for logistic industry to success in international markets. The qualitative study used as research methodology that utilizes primary data from the ABC PLC and the data collection was done by the utilization of structured interviews. Furthermore, thematic analysis was used in order to analyze the data gathered via interviews and accordingly the findings were generated. Accordingly, key findings were listed down under five topics respectively, relevance of JV for the international expansion, factors hindering the success of joint ventures, internationalization via joint ventures, the importance of selecting a reliable JV partner, significance of cultural distance on expansion decisions. Finally, the research implications were made theoretically and practically. Under theoretical implication, the paper explains how this study strengthens the existing literature while practical implications guide research towards selection of reliable partners and country for JV creation in international expansion.

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The impact of intellectual capital on financial performance of public listed material companies in Sri Lanka

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Abstract

The purpose of this study is to examine the impact of intellectual capital on the financial performance of public listed material companies in Sri Lanka. The Modified Value-Added Intellectual Capital Coefficient (M-VAIC) has been employed to measure the Intellectual Capital Efficiency together with the measurements of value creation efficiencies of capital employed, human capital, structural capital and Relational Capital of selected firms. This study used panel data consisting of 18 listed public material sectors of the Colombo stock exchange as a sample for the period of 2015-2022. The random-effect model was chosen to examine the impact of intellectual capital on financial performance of public listed material companies in Sri Lanka. The findings of the study proved that human capital efficiency, structural capital efficiency and capital employed efficiency contribute to positive significance and relational capital efficiency negative significant to the financial performance of public listed material companies in Sri Lanka.

Keywords: Human capital efficiency, Structural capital efficiency, Capital employed efficiency, Relational capital efficiency, Financial performance

1. INTRODUCTION

1.1 BACKGROUND OF THE STUDY

When people enter into the knowledge economy, intellectual capital regularly replaces actual capital, changing the source of useful improvements in modern enterprises. The idea of intellectual capital was first proposed in 1969 by the famous American economist James Galbraith. All members of the company know it which can help the company understand its competitive advantage in the market (Stewart & T, 1997). Barney (1991) mentioned intellectual capital because the company's resources, including its assets, skills, organizational structure, business characteristics, and knowledge, collectively contribute to the improvement of company performance and sustainable competitive advantage (Aruppala, et al., 2015).

Resources that make the company competitive and help it achieve fair results over the long term. From the perspective of resource theory, intellectual capital is one of the most important resources of an organization. Measuring intellectual capital is essential for comparing different companies, assessing their true value, and even improving their control. Intellectual capital as well as knowledge, experience,

financial resources, operating strategies, and investor reports provide opportunities to improve the overall performance of the organization (Abdullah, et al., 2012). In terms of intellectual capital, the company's intangible assets are mainly divided into three categories: human capital, customer capital, and structural capital. (RBT) stated that the company has the capital to make the business profitable and may lead to the need to ensure long-term successful production (Ulum & Syam, 2017). Intellectual capital includes three main areas, such as human-centered capital, Capital structure, and customer capital. Therefore, intellectual capital is usually viewed from three dimensions, including human capital, structural capital, and relational capital (Shih, et al., 2011).

In traditional accounting system, intellectual capital is often seen as a sort of unaccounted capital.' the normal accounting looks largely at separable assets, although some intellectual capital is recognized under the heading 'goodwill' (Abeysekera, et al., 2005). For whether a company's stock value is different from its value has often been debated and discussed. The worth valued at stock exchanges could also be perhaps ten times above the worth stated on the average balance sheets, due to many factors. Academics and practitioners sought out the possible sources of this difference in value. The material sector has always had a Technology appetite.

The material industry is replaced globally by a knowledge-based, quickly evolving, and technologically oriented economy (Thiagarajan & Baul, 2013). Global trade is founded on goods manufactured, not services. Consistent with the WTO, merchandise trade is 80% of world trade between regions, and services are mostly depending into material goods. The expansion of producing machinery output and technological improvements therein machinery is that the main drivers of the economic process. Material companies in Sri Lanka provide a high contribution to the Sri Lankan economy. As stated by Sri Lanka's financial institution, the most important proportion of the economic sector consisted of producing businesses that accounted for 17% of the whole segmented output. They're generated high levels of production, exchange, and employment. The material sector is an emerging sector of the economy with traditional organizations into the knowledge and technology base organization system. Therefore, this research is conduct to research the impact of intellectual capital on the financial performance of public listed material companies in Sri Lanka.

1.2 RESEARCH PROBLEM

The intense dependency on financial knowledge and therefore the general absence of intellectual capital knowledge within mainstream accounting is that the key barrier to understanding the worth of intellectual capital in practice. The heavy reliance on financial information and therefore the general lack of intellectual capital information within traditional accounting has been the most obstacle to acknowledging, in practice, the importance of intellectual capital (Abeysekera, et al., 2005).

Having identified the utilization of Intellectual Capital as a strategic asset in modern business and up-to-date developments in knowledge-related intangible assets, it's possible to know the potential value and contemporary importance of IC on research. Also, research on Intellectual Capital in developing countries is minimal, research results on how companies enjoy IC are difficult to generalize during a sort of contexts because IC is contextually different thanks to financial, political, cultural, and technical factors, and IC research currently available in Sri Lanka is nearly small to IC disclosures. It's therefore appropriate to conduct a study on a timely basis aside from the IC disclosures in Sri Lanka.

And also, there are many types of research available associated with the Intellectual Capital and Financial performance of companies. But there's a scarcity of researches available within the Sri Lankan context. As there are few researches have been done regarding the impact of intellectual capital on the financial performance of public listed companies in Sri Lanka. All of them have done them researches by using the worth Added Intellectual Capital method. None of them have used the Modified Value Added Intellectual Capital method for his or their researches (Kehelwalatenna & Gunaratne, 2010), (Aruppala, et al., 2015). Therefore, this study sought to fill the research gap by investigating the Intellectual Capital and Financial performance of public listed material companies in Sri Lanka.

1.3 RESEARCH OBJECTIVES

1. To identify the level of the intellectual capital of public listed material companies in Sri Lanka
2. To identify the level of financial performance of public listed material companies in Sri Lanka
3. To examine the impact of Human Capital Efficiency on the financial performance of public listed material companies in Sri Lanka.
4. To examine the impact of Structural Capital Efficiency on the financial performance of public listed material companies in Sri Lanka.
5. To examine the impact of Capital Employed Efficiency on the financial performance of public listed material companies in Sri Lanka.
6. To examine the impact of Relational Capital Efficiency on the financial performance of public listed material companies in Sri Lanka.

1.4. SIGNIFICANCE OF THE STUDY

The advantage of the company's intellectual capital is assumed to possess an effect on financial results. The higher the Intellectual Capital Performance, the better the income. Therefore, the information of knowledge and intellectual capital as intangible assets is vital to firm performance which eventually affects the whole economy. Researchers, academicians, and economists have put in great efforts and resources in enriching their understanding of intellectual capital and exploring its varied facets. But, there is a lack of studies on intellectual capital and firm performance within the Sri Lankan context. The main objective of this research is to determine the impact of intellectual capital efficiency (VAIC) on the financial performance of public listed material companies in Sri Lanka. Therefore, this research will help future researchers and people interested in this, as there are very few types of research on this area and this research fills the empirical gap of research related to intellectual capital such as dimensions of intellectual capital, methods of measuring intellectual capital, etc. Further, these findings would be provided some information to the stakeholders and potential investors to assess the value-creating capabilities of selected manufacturing companies. The findings of this study help decision-makers be aware of the importance of intellectual capital as a key factor that can enhance a firm's ability to maintain its competitive position.

1.5 SCOPE OF THE STUDY

The main objective of this research is to study the impact of intellectual capital on financial performance of public listed material companies in Sri Lanka. Here, intellectual capital is the independent variable, financial performance is the dependent variable in the research. This study will be mainly based on secondary data. Secondary data can be collected from annual reports of 26 material public listed companies of Colombo stock exchange.

1.6 EMPIRICAL REVIEW

Intellectual capital is a significant business tool for achieving and sustaining competitive excellence (Pulic & Kolakovic, 2005). It is assumed that the competitive advantage of the firm's intellectual capital is an impacts financial performance. The higher the performance of intellectual capital, the greater the financial performance. According to (Zeghal & Maaloul, 2010), IC is the intellectual ability of the organization, which describes how efficiently businesses use physical resources and intellectual ability to generate value or how information is effectively turned into value. Human capital is composed of factors that add value to the workforce, including training and skills. According to Roos et al (Anon., 1997) human capital is intellectual intelligence and competencies. Zambon (Anon., 2002) defined human capital as collective knowledge, employee creativity, and employee innovation (Yilmaz & Acar, 2018).

Human capital refers to the information, abilities, and perspectives workers rely on as they leave the company (Fathi, et al., 2013). Belkaoui (Anon., 2003) describes structural capital as awareness of the

enterprise in terms of technology, innovations, records, journals, strategy, culture, structure systems, routines and procedures. This includes and reflects the success of policies and procedures, the constructive aspects of the working environment and the progress created by research and development. Roos et al. (Anon., 1997) suggests that structural capital is "what stays in the business as workers go home for the night" and notes that it should legitimately defend its other components in the form of patents and trademarks (Yilmaz & Acar, 2018).

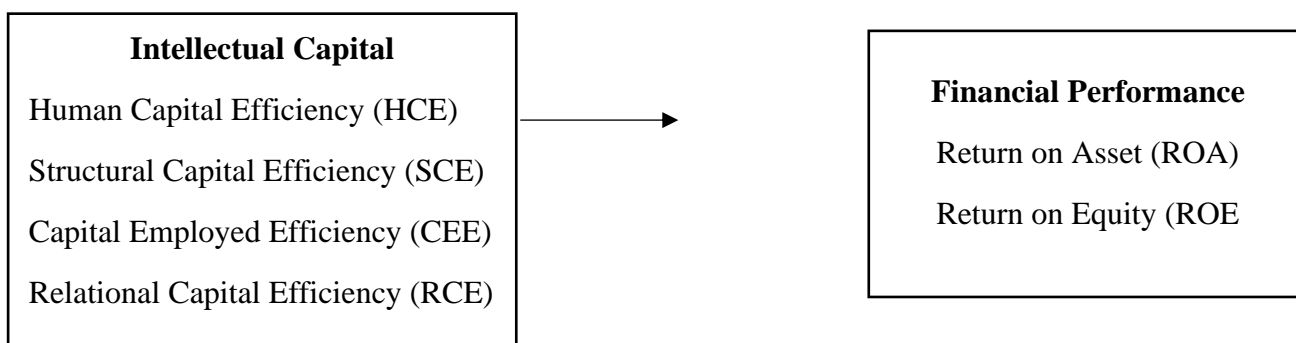
Bontis (Anon., 1999) describes market channel knowledge, relationships with customers and suppliers, and a sound understanding of the impacts of government and industry associations as the main theme (Yilmaz & Acar, 2018). Relationships with customers and suppliers, government associations or linked industry associations, brand names, trademarks, and reputation make up customer capital, also known as relational capital or external capital. According to Acinar and Akdemir (Anon., 1999), this refers to the relations or network of associates of the organization and their satisfaction with and loyalty to the company (Hashima, et al., 2015). Pulic's approach consists of three aspects of intellectual capital as Human Capital Efficiency, Structural Capital Efficiency (SCE), and Capital Employed Employment (CEE). Human capital (HC) is seen as the most important innovation and competitiveness factor (Pulic, 2008).

Ulum et al. (Anon., 2014) Suggest that M-VAIC is more informative than the traditional VAIC model. M-VAIC has one more variable, called Relational Capital Efficiency (RCE). It is calculated as the value-added (VA) division of relational capital (RC). They identified and calculated Relational Capital (RC) as the cost of marketing (Ulum, et al., 2014). Ozkan, Cakan, & Kayacan (Anon., 2016; Farrukh & Joiya, 2018) examined the relationship between the performance of intellectual capital and the financial performance of 44 banks operating in Turkey over the period from 2005-2014. The intellectual capital performance of banks is measured through the value-added intellectual coefficient (VAIC) method. The findings indicated that HC and CE both have a positive influence on the financial performance of banks (ROA). However, CE affects banks' financial performance more than HC.

2 METHODS

2.1 Conceptual Framework

The conceptual framework is used to indicate the relationship between the variables which are involved in the study. According to educational researcher Smyth (2004), conceptual frameworks are structured from a group of broad ideas and theories that help a researcher to properly identify the matter they are looking at, frame their questions, and find suitable literature. In the conceptual framework of this study; financial performance is the dependent variable and Intellectual capital is the independent variable. As dependent variable two factors can be identified under the financial performance including ROA and ROE. As independent variables, four factors can be identified under the intellectual capital including human capital efficiency, structural capital efficiency, capital employed efficiency, and relational capital efficiency.



The Operationalization framework is a detailed diagram of narrowed - down variables in the conceptual framework. It also describes and indicates and measures relevant to each variable the following operational framework is developed by the research based on the previously mentioned

conceptualization. The researcher has used the following independent variables based on Pulic's VAIC model (2008) and the M-VAIC model which is constructed by (Ulum & Ghazali, 2014).

M VAIC= Modified Value-Added Intellectual capital

M-VAIC = HCE+SCE+CEE+RCE

VA = OP + EC + D + A

Where; OP = Operating Profit, EC = Employee Cost, D = Depreciation, A = Amortization

2.2.1 Summary of Operationalization of Variable

Variable	Dimension	Measure	Reference
Financial Performance	ROE	$\frac{\text{Net profit}}{\text{Shareholders' equity}}$	(Hargrave, 2021)
	ROA	$\frac{\text{Net Income}}{\text{Total Assets}}$	(Ulum, et al., 2017)
Intellectual Capital	HCE	$\frac{\text{Value added (VA)}}{\text{Human Capital (HC)}}$	(Pulic, 2000)
	SCE	$\frac{\text{Structural Capital (SC)}}{\text{Value Added (VA)}}$	(Stahle, et al., 2011)
	CEE	$\frac{\text{Value Added (VA)}}{\text{Capital Employed (CE)}}$	(Holienka & Pilkova, 2014)
	RCE	$\frac{\text{Relational Capital}}{\text{Value Added (VA)}}$	(Ulum, et al., 2014)

2.3 Hypotheses

H1a: Human Capital Efficiency has a significant impact on financial performance of public listed material companies in Sri Lanka

H1b: Structural Capital Efficiency has a significant impact on financial performance of public listed material companies in Sri Lanka

H1c: Capital Employed Efficiency has a significant impact on financial performance of public listed material companies in Sri Lanka

H1d: Relational Capital Efficiency has a significant impact on financial performance of public listed material companies in Sri Lanka.

2.4 Study Population and Sample

As of 31 August 2022, the Colombo Stock Exchange comprises 287 companies across 19 Global Industry Classification Standard (GICS) industry groups. Among these, there are a total of 23 material companies in Sri Lanka, which constitutes the entire population for the study. From this population, a sample size of 18 public listed material companies listed on the CSE. The sample was chosen using a random sampling method from the selected industries.

2.5 Method of Data Analysis and Evaluation

This study is conducted by using 18 public listed material companies in the Colombo stock exchange and analyzes the impact of compliance through reviewing the annual reports of each listed company

from 2015 to 2022. In the data analysis, the data collected are statistically analyzed to see if the hypotheses that were created have been supported. The gathered data analyzed by using Descriptive statistics, Pearson correlation, and Panel regression method with the support of STATA software.

The researcher has obtained balanced panel data refers to the fact that all the public listed material companies have data for all years. Panel data models are generally estimated using fixed-effects or random-effects models. In the fixed-effect model, the individual-specific effect is a random variable that can be correlated with the explanatory variables.

Multiple regression analysis determines the relative contribution of each predictor to the overall fit and overall variability of the model. In the static effect model, the individual-specific effect is a random variable that can be correlated with explanatory variables. The reason behind the random effect model is that, unlike the static effect model, the person-specific effect is a random variable that does not correlate with the explanatory variables included in the model. To find out which of these models is more appropriate, the Hausman test can be performed. The panel reaction model is shown below.

$$ROA_{it} = \beta_0 + \beta_1 HCE_{it} + \beta_2 SCE_{it} + \beta_3 CEE_{it} + \beta_4 RCE_{it} + \varepsilon_{it}$$

Where, ROA= Return on Assets

β_0 = Constant

HCE = Human Capital Efficiency

SCE= Structural Capital Efficiency

CEE= Capital Employed Efficiency

RCE= Relational Capital Efficiency

$$ROE_{it} = \beta_0 + \beta_1 HCE_{it} + \beta_2 SCE_{it} + \beta_3 CEE_{it} + \beta_4 RCE_{it} + \varepsilon_{it}$$

Where, ROE= Return on Equity

β_0 = Constant

HCE = Human Capital Efficiency

SCE= Structural Capital Efficiency

CEE= Capital Employed Efficiency

RCE= Relational Capital Efficiency

3. RESULTS

3.1 Normality Test

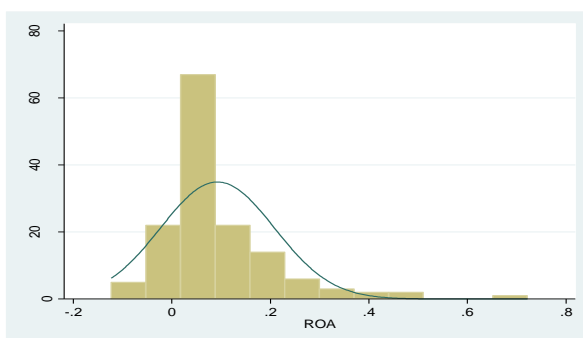


Figure 3.1 Normality Distribution of ROA

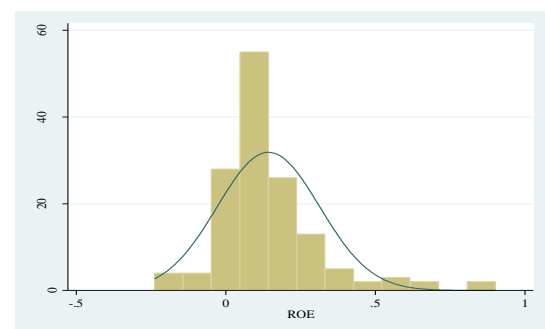


Figure 3.2 Normality Distribution of ROE

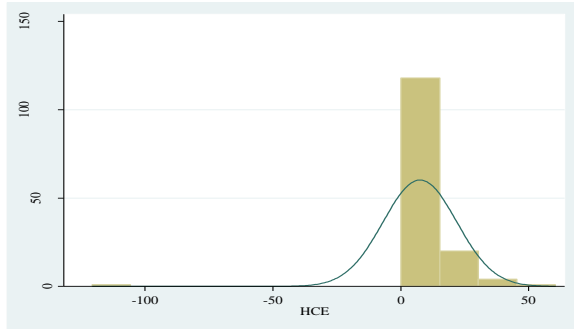


Figure 3.3 Normality Distribution of HCE

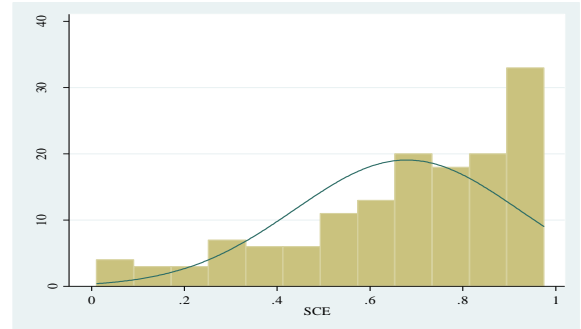


Figure 3.4 Normality Distribution of SCE

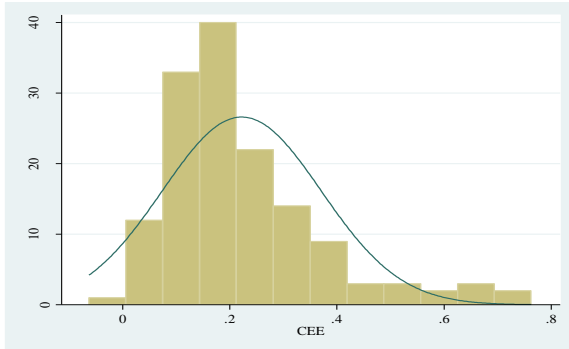


Figure 3.5 Normality Distribution of CEE

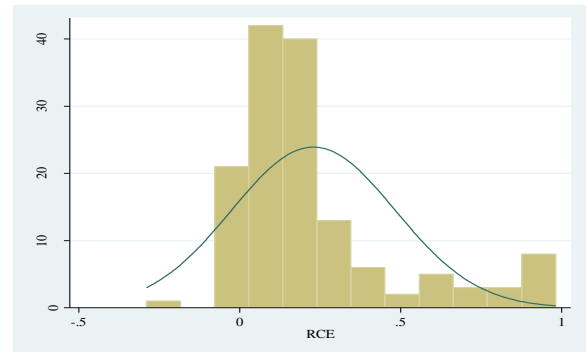


Figure 3.6 Normality Distribution of RCE

3.2 Descriptive Statistics

Table 3.1 Descriptive Analysis

Descriptive statistics	ROA	ROE	HCE	SCE	CEE	RCE
No of Firms	18	18	18	18	18	18
No of Observation	144	144	144	144	144	144
Minimum	-0.123	-0.238	-120.66	0.011	-0.063	-0.29
Maximum	0.722	0.902	60.495	0.975	0.763	0.982
Mean	0.09247	0.1426	7.5040	0.679	0.2221	0.2288
Standard Deviation	0.1157	0.17129	14.3938	0.2418	0.1485	0.2545

(Source: Survey Data)

When considering return on assets, there is maximum value 0.722 and minimum value of -0.123. The ROA has a mean value of 0.09247 this means the typical value of ROA is 0.09247. It has the Standard deviation of 0.1157. It reflects that values of ROA vary around the mean value of 0.09247. Maximum and minimum value of ROE is respectively 0.902 and -0.238. The average ROE 0.1426 and standard deviation of 0.17129. It reveals that value of ROE around the mean value 0.1426.

When considering the Human capital efficiency, there is a maximum value 60.495 and a minimum value of -120.66. HCE has a mean value of 7.5040. Standard deviation of in HCE is 14.3938. It reveals that values of Human Capital Efficiency vary around the mean value of 7.5040. The Structural Capital efficiency, there is maximum value 0.975 and minimum value of 0.011. The SCE has a mean value of

0.679. Standard deviation of SCE is 0.2418. It reveals that value of SCE vary around the mean value if 0.679. When considering the Capital Employed efficiency, there is a maximum value 0.763 and a minimum value of -0.063. CEE has a mean value of 0.2221. Standard deviation of in CEE is 0.1485. It reveals that values of Capital Employed Efficiency vary around the mean value of 0.2221. Relational capital efficiency maximum value of 0.982 and minimum value of -0.29. Mean value of RCE is 0.2288, it is the average RCE for the period of 2013- 2020. It has the standard deviation of 0.2545. It reflects that values of RCE vary around the mean value of 0.2288.

3.3 Panel Correlation Analysis

Correlation analysis is a statistical method used to gauge the strength of the relationship between two quantitative variables. A high correlation means that two or more variables have a strong relationship with each other, while a weak correlation means that the variables are hardly related. There are two types of correlation analyses namely Pearson correlation and spearman correlation. (Saunders & Thornhill, 2009). Pearson correlation coefficient is used to measure the degree of the linear relationship between two variables and also it used to measure the strength of the association between any two metric variables (Field, 2013). Correlation coefficient (r) value can range from -1 to +1. If Pearson correlation is

Table 3.2 Correlation Matrix: ROA, HCE, SCE, CEE, RCE

	ROA	HCE	SCE	CEE	RCE
ROA	1.0000				
HCE	0.4417	1.0000			
SCE	0.3679	0.3799	1.0000		
RCE	-0.2260	0.1649	-0.0060	1.0000	
CEE	0.7870	0.2420	0.2006	-0.2030	1.0000

(Source: Survey Data)

The correlation analysis has been done to identify the association of intellectual capital and financial performance of public listed material companies in Sri Lanka. It is used to find out the relationship between human capital efficiency, structural capital efficiency, capital employed efficiency, relational capital efficiency and financial performance about ROA and ROE. According to the table HCE, SCE, CEE and RCE were positively correlated with ROA.

The value of the Pearson correlation of HCE was 0.4417 Hence there is a Moderate positive relationship between HCE and ROA. The value of the Pearson correlation of SCE was 0.3679. Hence there is a Moderate positive relationship between SCE and ROA. The value of the Pearson correlation of CEE was 0.7870. Hence there is a strong positive relationship between CEE and ROA. According to the correlation table RCE was negatively associated with the ROA. The value of Pearson correlation was -0.2260. Hence there is a Weak negative relationship between RCE and ROA in public listed material companies in Sri Lanka.

Table 3.3 Correlation Matrix: ROE, HCE, SCE, CEE, RCE

	ROE	HCE	SCE	CEE	RCE
ROE	1.0000				
HCE	0.4338	1.0000			
SCE	0.3936	0.3799	1.0000		
RCE	-0.1930	0.1649	-0.0060	1.0000	
CEE	0.7703	0.2420	0.2006	-0.2030	1.0000

(Source: Survey Data)

According to table HCE, SCE and CEE were positively correlated with ROE. RCE was negatively correlated with ROA. The value of the Pearson correlation of HCE was 0.4338. Hence there is a Moderate positive relationship between HCE and ROE. The value of the Pearson correlation of SCE was 0.3936. Because there is a Moderate positive relationship between SCE and ROE. The value of the Pearson correlation of CEE was 0.7703. Hence there is a strong positive relationship between CEE and ROE. The value of the Pearson correlation of RCE was -0.1930. Hence there is a Weak negative relationship between RCE and ROE.

3.4 Panel Data Analysis

In this study, there are many types of analysis done under the panel data analysis to achieve the objectives of the study. Unit root test for measure the stationary of data, fixed effect model for regression analysis, autocorrelation test etc.

3.4.1 Stationary of Data

In this study was run Levin-Lin-Chu for test stationary properties of longitudinal panel data because technique with the non-stationary property will result in a spurious regression.

H₀: Series is Non-Stationary

H_a: Series is Stationary

If the null hypothesis is reject, then can apply first difference to set the stationary of data. In this study apply first difference for all variables.

Table 3.4 Unit Root Test

Variables	Statistics	P value	Stationary/Unit root
HCE	-7.6663	0.0000	Stationary
SCE	-8.8998	0.0000	Stationary
RCE	-5.2304	0.0000	Stationary
CCE	15.6932	0.0000	Stationary
ROA	-7.2546	0.0000	Stationary
ROE	-9.4126	0.0000	Stationary

(Source: Survey Data)

Levin-Lin-Chu unit-root test for unit root is conducted to check the stationary. According to the Levin-Lin-Chu results, the all P value is less than the 0.05 there for

3.4.2 Multicollinearity

Multi-co-linearity occurs when independent variables in a regression model are correlated. Multicollinearity is a state of very high intercorrelations or inter-association among the independent variables. Variance Inflation Factor was tested to see whether there is a presence of autocorrelation and multicollinearity in the data set. If the value VIF is more than 10 or the tolerance (1/VIF) is less than 0.1, there may be a problem of multicollinearity. According to Table, the value of the VIF for each variable is less than 10. As well as mean VIF value is 1.18. Therefore, the value of these statistical tests is accepted, indicating that there is no presence of multicollinearity in the data.

Table 3.5 Test of multicollinearity

Variables	VIF	1/VIF
HCE	1.27	0.7844
SCE	1.19	0.8413
RCE	1.15	0.870
CCE	1.10	0.9081

(Source: Survey Data)

3.4.3 Heteroscedasticity Test

The following the general null hypothesis of Breusch-Pagan tests, the researcher develops the following hypothesis to check the presence of heteroscedasticity.

H₀: There is Homoscedasticity

H₁: There is Heteroscedasticity

Table 3.6 Heteroscedasticity Test

Chi2	3.00
Prob > chi2	0.0835

(Source: Survey Data)

Since the p value is more than the significant value at 0.05, the null hypothesis of homoscedasticity is failed to reject at 5% of significant level. This is implying that there is no enough evidence for the present of Heteroscedasticity in this research model.

3.5 Panel Regression Analysis

The regression analysis was used in this research to determine the functional relationship between the independent variable and the dependent variable. It has mainly two aspects; the strength of the relationship and the statistical significance of the relationship, Researcher have obtained balanced panel data refers to the fact that all the firms have data for all years. Panel data models are generally estimated using fixed effects or random effects models.

Table 3.7 Fixed Effect and Random Effect Regression Analysis for ROA

Variables	Fixed Effect / ROA		Random Effect/ ROA	
	Coefficient	p-value	Coefficient	p-value
HCE	0.00156	0.000	0.00164	0.000

SCE	0.04916	0.085	0.05475	0.032
RCE	-0.06532	0.013	-0.06338	0.007
CEE	0.57895	0.000	0.56265	0.000
Constants	0.57895	0.007	-0.06752	0.004
Overall R-Squared	0.7120		0.7151	

(Source: Survey Data)

Table 3.8 Fixed Effect and Random Effect Regression Analysis for ROE

Variables	Fixed Effect / ROE		Random Effect/ ROE	
	Coefficient	p-value	Coefficient	p-value
HCE	0.00235	0.000	0.00238	0.000
SCE	0.07658	0.106	0.09703	0.018
RCE	-0.09238	0.034	-0.79502	0.035
CEE	0.75586	0.000	0.763117	0.000
Constants	-0.07382	0.068	-0.09248	0.011
Overall R-Squared	0.6861		0.6910	

(Source: Survey Data)

3.5.1 Model for Regression Analysis

The hausman test was run to select the suitable model for the regression analysis for this study. According to the table, was selected the suitable model as random effect model to run the regression.

Table 3.9 Hausman Test

	chi2(4)	Prob>chi2
ROA	2.37	0.6685
ROE	1.87	0.7601

(Source: Survey Data)

The probability value of ROA 0.6685 < 0.05. And ROE 0.7601 > 0.05 Therefore, Random effect model is selected to analyze the regression. In the table 3.7 indicates ROA R square 71.51% and table 3.8 ROE R square 69.10% that indicate the explanatory power of the independent variables to the dependent variables. It means 71.51% ROA and 69.10% ROE variation of dependent variable is explained by the independent variable through the selected four variables. The adjusted R square represent when another variable is added to the model, how far it will explain the dependent variable.

The constant statistic ROA is 0.06752 and ROE is 0.09248 units show the model would predict independent variables were nearly zero. The coefficient is explained what extend the independent variable have impact on the dependent variable. The ROA β coefficient of HCE is 0.00164 But it is significant (p= 0.000) and ROE β coefficient of HCE is 0.00238 But it is significant (p= 0.000) in the material sector. Its mean Human Capital Efficiency has a significant positive impact on the financial performance.

The ROA β coefficient of SCE is 0.05475 and is significant (p= 0.032) and ROE β coefficient of SCE is 0.09703 and is significant (p= 0.018) at 0.05 level of significance towards the SCE in the material

sector. It means that there is a significant positive impact of structural capital efficiency on financial performance. The ROA β coefficient of RCE is -0.06338 and is significant ($p= 0.007$) and ROE β coefficient of RCE is -0.79502 and is significant ($p= 0.035$) at 0.05 level of significance towards the RCE in the material sector. It means that there is a significant negative impact of relational capital efficiency on financial performance.

The ROA β coefficient of CEE is 0.56265 and is significant ($p= 0.000$) and ROE β coefficient of RCE is 0.763117 and is significant ($p= 0.000$) at 0.05 level of significance towards the CEE in the material sector. It means that there is a significant positive impact of relational capital efficiency on financial performance. Based on the coefficient table the regression equation can be drawn as follows;

$$ROA_{it} = \beta_0 + \beta_1 HCE_{it} + \beta_2 SCE_{it} + \beta_3 CEE_{it} + \beta_4 RCE_{it} + \epsilon_{it}$$

$$ROA = -0.06752 + 0.00164(HCE_{it}) + 0.05475(SCE_{it}) + 0.5626(CEE_{it}) - 0.06338(RCE_{it})$$

$$ROE_{it} = \beta_0 + \beta_1 HCE_{it} + \beta_2 SCE_{it} + \beta_3 CEE_{it} + \beta_4 RCE_{it} + \epsilon_{it}$$

$$ROE = -0.09248 + 0.00238(HCE_{it}) + 0.09703(SCE_{it}) + 0.76311(CEE_{it}) - 0.7950(RCE_{it})$$

3.6 Hypothesis Testing

Hypothesis 1

H0: There is no significant impact of Human Capital Efficiency on the financial performance of public listed material companies in Sri Lanka.

H1: There is a significant impact Human Capital Efficiency on the financial performance of public listed material companies in Sri Lanka.

The ROA β coefficient of HCE is 0.00164 But it is significant ($p= 0.000$) and ROE β coefficient of HCE is 0.00238 But it is significant ($p= 0.000$) in the material sector According to this Panel regression analysis the P values of HCE are significant in both ROA and ROE. There is enough evidence to reject null hypothesis. It can be concluded that there is a significant impact Human Capital Efficiency on the financial performance of public listed material companies in Sri Lanka.

Hypothesis 2

H0: There is no significant impact Structural Capital Efficiency on the financial performance of public listed material companies in Sri Lanka.

H1: There is a significant impact Structural Capital Efficiency on the financial performance of public listed material companies in Sri Lanka.

The ROA β coefficient of SCE is 0.05475 and is significant ($p= 0.032$) and ROE β coefficient of SCE is 0.09703 and is significant ($p= 0.018$) at 0.05 level of significance towards the SCE in the material sector. According to this Panel regression analysis the P values of SCE are significant in both ROA and ROE. There is enough evidence to reject null hypothesis. It can be concluded that; there is a significant impact Structural Capital Efficiency on the financial performance of public listed material companies in Sri Lanka.

Hypothesis 3

H0: There is no significant impact Capital Employed Efficiency on the financial performance of public listed material companies in Sri Lanka.

H1: There is a significant impact Capital Employed Efficiency on the financial performance of public listed material companies in Sri Lanka.

The ROA β coefficient of CEE is 0.56265 and is significant ($p= 0.000$) and ROE β coefficient of RCE is 0.763117 and is significant ($p= 0.000$) at 0.05 level of significance towards the CEE in the material sector. According to this Panel regression analysis the P values of CEE are significant in both ROA and ROE. There is enough evidence to reject null hypothesis. It is concluded that there is a significant impact Capital Employed Efficiency on the financial performance of public listed material companies in Sri Lanka.

Hypothesis 4

H0: There is no significant impact Relational Capital Efficiency on the financial performance of public listed material companies in Sri Lanka.

H1: There is significant impact of Relational Capital Efficiency on the financial performance of public listed material companies in Sri Lanka.

The ROA β coefficient of RCE is -0.06338 and is significant ($p= 0.007$) and ROE β coefficient of RCE is -0.79502 and is significant ($p= 0.035$) at 0.05 level of significance towards the RCE in the material sector. According to this Panel regression analysis the P values of RCE significant in both ROA and ROE. There is enough evidence to reject null hypothesis. It is concluded that; there is significant impact of Relational Capital Efficiency on the financial performance of public listed material companies in Sri Lanka.

4. CONCLUSION AND DISCUSSIONS

4.1 The impact of Human Capital Efficiency on the financial performance

Human capital efficiency is found to be positively related to financial performance ratio and statistically significant at 1% level of significant. HCE are significant in both ROA and ROE. The result proved by the empirical finding of (Abdullah & Sofian, 2012) having an significant impact on the intellectual capital in the Corporate Performance. According to the study (Isanzu, 2015; vishnu & Gupta, 2014) it reveals that the answers of the participants indicate that it was seen that while Human Capital Efficiency have positive impact on Financial Performance.

4.2 The impact of Structural Capital Efficiency on the financial performance

Structural capital efficiency is found to be positively related to financial performance ratio and statistically significant at 1% level of significant. Therefore, there is enough evidence to reject null hypothesis as ($p < 0.05$). SCE are significant in both ROA and ROE. On the other hand, although the dimension of (Ulum, 2014) had a significant positive impact on Structural Capital Efficiency financial performance. According to the findings from (Arslan & Kızıl, 2019) exhibits the regression results of the intellectual capital dimension such as protection SCE, are on the listed banks performance measures. The findings indicate that there is a significant positive impact on structural capital on the financial performance. These results provide empirical support for the previous literature of (Pablos, 2003) and (Kizil, et al., 2013).

4.3 The impact of Capital Employed Efficiency on the financial performance

According to the third research question of the study this part reveals about how impact of Capital Employed Efficiency on the financial performance of public listed material companies in Sri Lanka. Capital employed efficiency is found to be positively related to financial performance ratio and statistically significant at 1% level of significant. Finally, it can be concluded that there is a significant impact Capital Employed Efficiency on the financial performance of public listed material companies in Sri Lanka. The result in same as finding of (Holienka & Pilková, 2014) Capital Employed Efficiency on the financial performance. As per the research findings having a significant positive impact on the intellectual capital in the firm Performance Before and After Crisis. While finding ROA and ROE are dependent variables, CEE is the positive significant impact contributor to financial performance and supports the study. (Phusavat, et al., 2011) In the Thai manufacturing industry. This means that the CEE is getting higher manufacturing company can be cheaper than a company. (Xu & Liu, 2020).

4.4 The impact of Relational Capital Efficiency on the financial performance

As per the fourth research question this study prove about how impact of Relational Capital Efficiency on the financial performance of public listed material companies in Sri Lanka. It is concluded that there is a significant impact of relational Capital Efficiency on the financial performance of public listed material companies in Sri Lanka. Relational capital efficiency is found to be positively related to financial performance ratio and statistically significant at 1% level of significant. Finally, it can be concluded that there is a significant impact Relational Capital Efficiency on the financial performance of public listed material companies in Sri Lanka. The findings related to Relational Capital Efficiency with financial performance has negative significant impact proven in previous researches regarding (Xu & Li, 2019).

The first objective of this to identify the status of the intellectual capital of public listed material companies in Sri Lanka. According to the descriptive analysis results, mean value of study variable, based on the decision rule, indicates there is high level of intellectual capital of public listed material companies in Sri Lanka.

The second objective of this to identify the level of financial performance of public listed material companies in Sri Lanka. According to the descriptive analysis results, mean value of study variable, based on the decision rule, indicates there is low level of intellectual capital of public listed material companies in Sri Lanka.

The third objective of the study is to examine the impact of Human Capital Efficiency on the financial performance of public listed material companies in Sri Lanka. The results of correlation analysis indicate that system human capital efficiency has a positive relationship with return on assets and return on equity. As well as consideration of multiple regression analysis there is a significant impact of Human Capital Efficiency on the financial performance. According to the above derived results, there is a significant impact of Human Capital Efficiency on the financial performance of public listed material companies in Sri Lanka.

The fourth objective of the study is to examine the impact of Structural Capital Efficiency on the financial performance of public listed material companies in Sri Lanka. According to the second research objective, researcher finds out the impact using multiple regression analysis. According to the analysis Structural Capital Efficiency having a significant positive impact on the Financial Performance of Listed public listed material companies in Sri Lanka. Findings suggest that increasing Structural Capital Efficiency associated with the increasing financial performance of the material companies.

The fifth objective of the study is to examine the impact of Capital Employed Efficiency on the financial performance of public listed material companies in Sri Lanka. According to the analysis Capital Employed Efficiency having a significant positive impact on the financial performance of public listed material companies in Sri Lanka. Findings suggest that Capital Employed Efficiency increasing with the increasing the financial performance of public listed material companies in Sri Lanka.

The sixth objective of the study is to examine impact of Relational Capital Efficiency on the financial performance of public listed material companies in Sri Lanka. According to the fourth research objective, researcher finds out the impact using multiple regression analysis. As per the analysis Relational Capital Efficiency having a significant negative impact on the Financial Performance of Listed public listed material companies in Sri Lanka. Findings suggest that increasing Relational Capital Efficiency associated with the decreasing financial performance of the public listed material companies in Sri Lanka.

4.5 Recommendations

When increasing the intellectual capital impact to improve the material company financial performance. On the basis of this research conducted, it is recommended that under the intellectual

capital indicator company have to focus knowledge, professional skills, expertise, educational level, database, software systems, distribution networks, organizational charts, customer relationships, and relationships with suppliers, customer loyalty, of overall to increase the level of financial performance. There is an approximate the impact of Intellectual Capital on Financial performance in material companies in Sri Lanka. So, this research may be more help to determine the intellectual capital and strategies financial performance of organization.

4.6 Future Implications

Based on the findings, the limitations of the study and experience of the researcher over the research period, the study has numerous areas where further research can be done. Future research essential to include many variable other than financial performance. This study considered only 18 material companies through the listed public sector. Further researches should develop by increasing sample size, more variables and time period. The time period of research is if improve researcher can get a standard answer. Conduct detailed researches in each industry. The results of study should be interpreted in light of these suggestions for the future researchers should attempt to overcome them while doing further. It is expected that the future researches may complete MVAIC models by adding new sizes for structural components of capital. The extended VAIC model and/or E-VAIC+ might be used to.

4.7 Limitation of the Study

01. The data collection focused on only one sector out of 18 sectors in the country.
02. The lack of data sources where there are some companies were omitted because of the missing values during the study's period.
03. Some the Intellectual capital dimensions like innovation capital are not quantified in the M-VAIC method.
04. Restricting data samples in one sector from twenty sectors specified in the CSE and limiting data collection to the financial year 2015 to 2022 alone can also be considered as some of the study's limitations.

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APPENDIX – I

Sector Composition

	NAME OF COMPANY
01	CIC HOLDINGS PLC
02	INDUSTRIAL ASPHALTS (CEYLON) PLC
03	AGSTAR PLC
04	LANKA ALUMINIUM INDUSTRIES PLC
05	SWISSTEK (CEYLON) PLC
06	PGP GLASS CEYLON PLC
07	ALUMEX PLC
08	TOKYO CEMENT COMPANY (LANKA) PLC
09	DIPPED PRODUCTS PLC
10	BOGALA GRAPHITE LANKA PLC
11	ACL PLASTICS PLC
12	CHEVRON LUBRICANTS LANKA PLC
13	ACME PRINTING & PACKAGING PLC
14	HAYCARB PLC
15	SAMSON INTERNATIONAL PLC
16	CHEMANEX PLC
17	UNION CHEMICALS LANKA PLC
18	RICHARD PIERIS EXPORTS PLC

APPENDIX – II

Data considered in study obtain to results

Material company	Year	HCE	SCE	RCE	CEE	ROA
CIC Holdings plc	2015	2.447	0.591	0.011	0.406	0.220
CIC Holdings plc	2016	1.083	0.076	0.167	0.038	0.032
CIC Holdings plc	2017	1.183	0.155	0.544	0.048	0.014
CIC Holdings plc	2018	4.335	0.769	0.701	0.178	0.220
CIC Holdings plc	2019	4.619	0.784	0.686	0.153	0.017
CIC Holdings plc	2020	3.254	0.693	0.977	0.106	0.034
CIC Holdings plc	2021	4.151	0.759	0.848	0.124	0.009
CIC Holdings plc	2022	5.763	0.826	0.659	0.160	0.035
Industrial Asphalts plc	2015	2.268	0.559	0.231	0.114	0.012
Industrial Asphalts plc	2016	2.150	0.535	0.299	0.112	0.036
Industrial Asphalts plc	2017	2.328	0.057	0.327	0.112	0.019
Industrial Asphalts plc	2018	2.444	0.191	0.212	0.185	-0.074
Industrial Asphalts plc	2019	1.454	0.312	0.224	0.090	-0.073
Industrial Asphalts plc	2020	60.495	0.283	0.014	0.763	0.722
Industrial Asphalts plc	2021	3.339	0.770	0.185	0.048	0.023
Industrial Asphalts plc	2022	22.313	0.255	0.062	0.198	0.164
Agestar plc	2015	26.665	0.262	0.124	0.124	0.070
Agestar plc	2016	20.669	0.149	0.904	0.185	0.014
Agestar plc	2017	7.199	0.161	0.099	0.144	0.064
Agestar plc	2018	9.258	0.192	0.097	0.097	0.053
Agestar plc	2019	-120.660	0.011	-0.290	-0.063	-0.123
Agestar plc	2020	30.182	0.173	0.125	0.067	0.023

Agestar plc	2021	3.851	0.740	0.241	0.099	0.047
Agestar plc	2022	4.128	0.258	0.041	0.097	0.038
Lanka Aluminium industries plc	2015	2.164	0.538	0.140	0.189	0.012
Lanka Aluminium industries plc	2016	2.310	0.567	0.095	0.204	0.023
Lanka Aluminium industries plc	2017	2.919	0.657	0.143	0.250	0.083
Lanka Aluminium industries plc	2018	2.487	0.598	0.182	0.227	0.054
Lanka Aluminium industries plc	2019	2.756	0.637	0.191	0.257	0.068
Lanka Aluminium industries plc	2020	2.981	0.664	0.151	0.274	0.070
Lanka Aluminium industries plc	2021	2.316	0.568	0.214	0.221	0.020
Lanka Aluminium industries plc	2022	2.305	0.566	0.246	0.202	0.014
Swisstek (ceylon) plc	2015	3.809	0.737	0.206	0.064	0.018
Swisstek (ceylon) plc	2016	5.516	0.819	0.201	0.095	0.050
Swisstek (ceylon) plc	2017	4.967	0.799	0.159	0.130	0.084
Swisstek (ceylon) plc	2018	5.720	0.825	0.190	0.141	0.057
Swisstek (ceylon) plc	2019	6.429	0.844	0.179	0.177	0.103
Swisstek (ceylon) plc	2020	5.725	0.825	0.158	0.176	0.103
Swisstek (ceylon) plc	2021	5.398	0.815	0.182	0.159	0.057
Swisstek (ceylon) plc	2022	6.516	0.847	0.161	0.193	0.084

PGP Glass Ceylon plc	2015	3.366	0.703	0.822	0.253	0.003
PGP Glass Ceylon plc	2016	3.461	0.711	0.976	0.260	0.015
PGP Glass Ceylon plc	2017	21.486	0.953	0.165	0.100	0.068
PGP Glass Ceylon plc	2018	21.999	0.955	0.786	0.023	0.098
PGP Glass Ceylon plc	2019	39.180	0.974	0.982	0.024	0.054
PGP Glass Ceylon plc	2020	11.525	0.913	0.170	0.095	0.036
PGP Glass Ceylon plc	2021	9.900	0.899	0.334	0.086	0.034
PGP Glass Ceylon plc	2022	28.774	0.965	0.228	0.087	0.038
Alumex plc	2015	2.048	0.512	0.001	0.186	0.077
Alumex plc	2016	21.494	0.953	0.097	0.236	0.143
Alumex plc	2017	4.568	0.781	0.079	0.316	0.180
Alumex plc	2018	7.093	0.859	0.026	0.440	0.242
Alumex plc	2019	8.596	0.884	0.009	0.358	0.180
Alumex plc	2020	5.567	0.820	0.021	0.173	0.006
Alumex plc	2021	4.230	0.764	0.225	0.151	0.009
Alumex plc	2022	4.325	0.769	0.260	0.151	-0.009
Tokyo Cement Company (Lanka) Plc	2015	5.774	0.827	0.642	0.159	0.038
Tokyo Cement Company (Lanka) Plc	2016	7.087	0.859	0.583	0.219	0.087
Tokyo Cement Company (Lanka) Plc	2017	4.980	0.799	0.593	0.159	0.048
Tokyo Cement Company (Lanka) Plc	2018	14.894	0.933	0.436	0.203	0.087
Tokyo Cement Company (Lanka) Plc	2019	22.027	0.955	0.305	0.285	0.167

Tokyo Cement Company (Lanka) Plc	2020	25.303	0.960	0.242	0.268	0.183
Tokyo Cement Company (Lanka) Plc	2021	39.604	0.975	0.917	0.038	-0.035
Tokyo Cement Company (Lanka) Plc	2022	6.046	0.835	0.763	0.113	0.025
Dipped products plc	2015	5.781	0.827	0.015	0.248	0.178
Dipped products plc	2016	2.955	0.662	0.023	0.151	0.075
Dipped products plc	2017	4.008	0.750	0.024	0.165	0.100
Dipped products plc	2018	14.187	0.930	0.043	0.101	0.030
Dipped products plc	2019	17.683	0.943	0.023	0.133	0.056
Dipped products plc	2020	14.477	0.931	0.037	0.107	0.023
Dipped products plc	2021	15.757	0.937	0.027	0.163	0.042
Dipped products plc	2022	19.046	0.947	0.024	0.223	0.072
Bogala Graphite plc	2015	5.251	0.810	0.602	0.191	0.046
Bogala Graphite plc	2016	6.091	0.836	0.481	0.300	0.139
Bogala Graphite plc	2017	1.464	0.317	0.981	0.169	0.000
Bogala Graphite plc	2018	2.922	0.658	0.286	0.599	0.127
Bogala Graphite plc	2019	1.953	0.488	0.389	0.416	-0.032
Bogala Graphite plc	2020	3.588	0.721	0.242	0.654	0.210
Bogala Graphite plc	2021	3.005	0.667	0.258	0.529	0.118
Bogala Graphite plc	2022	2.405	0.584	0.308	0.393	0.058

ACL Plastics plc	2015	4.443	0.775	0.038	0.148	0.041
ACL Plastics plc	2016	5.756	0.826	0.035	0.166	0.079
ACL Plastics plc	2017	6.163	0.838	0.030	0.204	0.091
ACL Plastics plc	2018	11.840	0.916	0.014	0.304	0.184
ACL Plastics plc	2019	9.945	0.899	0.015	0.275	0.146
ACL Plastics plc	2020	5.167	0.806	0.028	0.139	0.061
ACL Plastics plc	2021	3.376	0.704	0.033	0.120	0.018
ACL Plastics plc	2022	6.080	0.836	0.020	0.210	0.103
Chevron Lubricants Lanka plc	2015	21.951	0.954	0.130	0.485	0.359
Chevron Lubricants Lanka plc	2016	20.805	0.952	0.139	0.594	0.424
Chevron Lubricants Lanka plc	2017	24.661	0.959	0.111	0.641	0.439
Chevron Lubricants Lanka plc	2018	25.908	0.961	0.110	0.696	0.494
Chevron Lubricants Lanka plc	2019	18.305	0.945	0.172	0.685	0.458
Chevron Lubricants Lanka plc	2020	14.607	0.932	0.200	0.526	0.328
Chevron Lubricants Lanka plc	2021	13.037	0.923	0.232	0.547	0.337
Chevron Lubricants Lanka plc	2022	13.275	0.925	0.219	0.452	0.283
ACME Printing & Packaging plc	2015	1.614	0.380	0.135	0.124	-0.054
ACME Printing & Packaging plc	2016	1.454	0.312	0.113	0.117	-0.062

ACME Printing & Packaging plc	2017	31.157	0.968	0.362	0.058	0.045
ACME Printing & Packaging plc	2018	2.658	0.624	0.049	0.117	0.016
ACME Printing & Packaging plc	2019	2.590	0.614	0.088	0.147	0.025
ACME Printing & Packaging plc	2020	2.920	0.658	0.050	0.129	-0.032
ACME Printing & Packaging plc	2021	3.222	0.690	0.045	0.160	-0.007
ACME Printing & Packaging plc	2022	1.600	0.375	0.096	0.089	0.087
Haycarb plc	2015	4.577	0.782	0.022	0.237	0.137
Haycarb plc	2016	3.853	0.740	0.050	0.178	0.088
Haycarb plc	2017	3.182	0.686	0.036	0.130	0.059
Haycarb plc	2018	2.621	0.618	0.035	0.168	0.063
Haycarb plc	2019	3.425	0.708	0.023	0.220	0.110
Haycarb plc	2020	2.836	0.647	0.020	0.183	0.077
Haycarb plc	2021	2.109	0.526	0.019	0.139	0.030
Haycarb plc	2022	3.156	0.683	0.015	0.235	0.106
Samson international plc	2015	2.097	0.523	0.128	0.332	0.094
Samson international plc	2016	1.914	0.478	0.113	0.327	0.086
Samson international plc	2017	1.969	0.492	0.123	0.305	0.039
Samson international plc	2018	1.589	0.371	0.178	0.308	0.056
Samson international plc	2019	1.717	0.418	0.119	0.351	0.042
Samson international plc	2020	1.523	0.344	0.154	0.290	0.000
Samson international plc	2021	1.727	0.421	0.165	0.334	0.021

Samson international plc	2022	1.621	0.383	0.176	0.332	0.010
Chemanax plc	2015	2.544	0.607	0.387	0.090	0.026
Chemanax plc	2016	1.634	0.388	0.900	0.056	-0.008
Chemanax plc	2017	1.013	0.013	0.903	0.055	-0.030
Chemanax plc	2018	3.602	0.722	0.371	0.116	0.050
Chemanax plc	2019	5.408	0.815	0.391	0.169	0.106
Chemanax plc	2020	34.352	0.971	0.188	0.184	0.113
Chemanax plc	2021	6.113	0.836	0.335	0.060	0.074
Chemanax plc	2022	28.273	0.965	0.177	0.163	0.165
Union chemicals lanka plc	2015	3.601	0.722	0.100	0.275	0.090
Union chemicals lanka plc	2016	3.657	0.727	0.141	0.283	0.111
Union chemicals lanka plc	2017	4.667	0.786	0.085	0.360	0.170
Union chemicals lanka plc	2018	3.293	0.696	0.064	0.366	0.156
Union chemicals lanka plc	2019	2.660	0.624	0.131	0.216	0.081
Union chemicals lanka plc	2020	2.693	0.629	0.113	0.152	0.046
Union chemicals lanka plc	2021	3.902	0.443	0.162	0.138	0.071
Union chemicals lanka plc	2022	2.802	0.643	0.152	0.200	0.101
Richard pyres exports plc	2015	2.251	0.556	0.161	0.235	0.051
Richard pyres exports plc	2016	2.339	0.572	0.166	0.254	0.099
Richard pyres exports plc	2017	2.776	0.640	0.120	0.331	0.169
Richard pyres exports plc	2018	3.468	0.712	0.085	0.363	0.222
Richard pyres exports plc	2019	12.256	0.918	0.075	0.378	0.281

Richard pyres exports plc	2020	11.241	0.911	0.078	0.337	0.269
Richard pyres exports plc	2021	14.185	0.930	0.078	0.267	0.253
Richard pyres exports plc	2022	16.271	0.939	0.046	0.268	0.257

APPENDIX- III

01. Descriptive Statistics

3 .
4 . summarize roa

Variable	Obs	Mean	Std. Dev.	Min	Max
roa	144	.0924722	.115799	-.123	.722

5 . summarize roe

Variable	Obs	Mean	Std. Dev.	Min	Max
roe	144	.1426458	.1712983	-.238	.902

7 . summarize sce

Variable	Obs	Mean	Std. Dev.	Min	Max
sce	144	.6790972	.2418975	.011	.975

8 . summarize rce

Variable	Obs	Mean	Std. Dev.	Min	Max
rce	144	.2288889	.2545342	-.29	.982

9 . summarize cee

Variable	Obs	Mean	Std. Dev.	Min	Max
cee	144	.2221319	.1485663	-.063	.763

10 . summarize hce sce rce cee roa roe

Variable	Obs	Mean	Std. Dev.	Min	Max
hce	144	7.504076	14.39386	-120.66	60.495
sce	144	.6790972	.2418975	.011	.975
rce	144	.2288889	.2545342	-.29	.982
cee	144	.2221319	.1485663	-.063	.763
roa	144	.0924722	.115799	-.123	.722
roe	144	.1426458	.1712983	-.238	.902

12 . tabstat roa roe,statistics(mean sd)by(year)

Summary statistics: mean, sd
by categories of: year (Year)

02. Unit Root Test

ADF regressions: 1 lag
LR variance: **Bartlett** kernel, 6.00 lags average (chosen by **LLC**)

	Statistic	p-value
Unadjusted t	-11.3318	
Adjusted t*	-8.8998	0.0000

15 . xtunitroot llc rce

Levin-Lin-Chu unit-root test for **rce**

Ho: Panels contain unit roots Number of panels = **18**
Ha: Panels are stationary Number of periods = **8**

AR parameter: **Common** Asymptotics: **N/T -> 0**
Panel means: **Included**
Time trend: **Not included**

ADF regressions: 1 lag
LR variance: **Bartlett** kernel, 6.00 lags average (chosen by **LLC**)

	Statistic	p-value
Unadjusted t	-7.7988	
Adjusted t*	-5.2304	0.0000

03. Test of multicollinearity

19 . regress roa hce sce rce cee

Source	SS	df	MS	Number of obs	=	144
Model	1.3791028	4	.344775699	F(4, 139)	=	89.00
Residual	.538441093	139	.003873677	Prob > F	=	0.0000
				R-squared	=	0.7192
				Adj R-squared	=	0.7111
Total	1.91754389	143	.013409398	Root MSE	=	.06224

roa	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
hce	.0019926	.0004083	4.88	0.000	.0011854 .0027998
sce	.0660689	.0234572	2.82	0.006	.01969 .1124479
rce	-.058819	.0214565	-2.74	0.007	-.1012423 -.0163957
cee	.5247026	.0375385	13.98	0.000	.4504823 .5989229
_cons	-.0704379	.0181786	-3.87	0.000	-.1063802 -.0344956

20 . regress roe hce sce rce cee

Source	SS	df	MS	Number of obs	=	144
Model	2.9115119	4	.727877974	F(4, 139)	=	78.76
Residual	1.28455306	139	.009241389	Prob > F	=	0.0000
				R-squared	=	0.6939
				Adj R-squared	=	0.6851
Total	4.19606496	143	.029343112	Root MSE	=	.09613

roe	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
hce	.0026467	.0006306	4.20	0.000	.0014 .0038935
sce	.1244506	.0362312	3.43	0.001	.0528152 .196086
rce	-.0633774	.033141	-1.91	0.058	-.1289031 .0021483
cee	.7634317	.0579808	13.17	0.000	.6487934 .87807
_cons	-.1168056	.028078	-4.16	0.000	-.1723209 -.0612903

21 . vif

Variable	VIF	1/VIF
hce	1.27	0.784449
sce	1.19	0.841344
cee	1.15	0.870949
rce	1.10	0.908192
Mean VIF	1.18	

04. Heteroscedasticity Test

22 . hettest

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

Ho: Constant variance

Variables: fitted values of roe

chi2(1) = 3.00

Prob > chi2 = 0.0835

05. Correlation Analysis

```
23 . correlate roa hce sce rce cee
    (obs=144)
```

	roa	hce	sce	rce	cee
roa	1.0000				
hce	0.4417	1.0000			
sce	0.3679	0.3799	1.0000		
rce	-0.2260	0.1649	-0.0060	1.0000	
cee	0.7870	0.2420	0.2006	-0.2030	1.0000

```
24 . correlate roe hce sce rce cee
    (obs=144)
```

	roe	hce	sce	rce	cee
roe	1.0000				
hce	0.4338	1.0000			
sce	0.3936	0.3799	1.0000		
rce	-0.1930	0.1649	-0.0060	1.0000	
cee	0.7703	0.2420	0.2006	-0.2030	1.0000

06. Results of Fixed Effect Model ROA

```
25 . xtreg roa hce sce rce cee, fe
```

```
Fixed-effects (within) regression
Group variable: company
```

```
Number of obs   =   144
Number of groups =    18
```

```
R-sq:
```

```
within = 0.6916
between = 0.7329
overall = 0.7120
```

```
Obs per group:
```

```
min = 8
avg = 8.0
max = 8
```

```
corr(u_i, Xb) = -0.0915
```

```
F(4,122) = 68.39
Prob > F = 0.0000
```

roa	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
hce	.0015665	.0003484	4.50	0.000	.0008768 .0022561
sce	.049165	.0283021	1.74	0.085	-.0068619 .1051919
rce	-.0653271	.0259062	-2.52	0.013	-.116611 -.0140433
cee	.5789544	.0503157	11.51	0.000	.4793494 .6785594
_cons	-.0663221	.0241176	-2.75	0.007	-.1140653 -.0185789
sigma_u	.04439302				
sigma_e	.04846239				
rho	.45625915	(fraction of variance due to u_i)			

```
F test that all u_i=0: F(17, 122) = 6.31
```

```
Prob > F = 0.0000
```

```
26 . estimates store fe
```

07. Results of Random Effect Model ROA

```
27 . xtreg roa hce sce rce cee, re
```

Random-effects GLS regression
 Group variable: **company**

Number of obs = 144
 Number of groups = 18

R-sq:
 within = 0.6911
 between = 0.7388
 overall = 0.7151

Obs per group:
 min = 8
 avg = 8.0
 max = 8

corr(u_i, X) = 0 (assumed)
 Wald chi2(4) = 319.86
 Prob > chi2 = 0.0000

roa	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
hce	.001645	.0003396	4.84	0.000	.0009793	.0023106
sce	.054755	.0255703	2.14	0.032	.0046382	.1048718
rce	-.0633876	.023441	-2.70	0.007	-.1093311	-.0174441
cee	.5626505	.0442068	12.73	0.000	.4760068	.6492942
_cons	-.0675296	.0233156	-2.90	0.004	-.1132273	-.021832
sigma_u	.04198887					
sigma_e	.04846239					
rho	.42879553	(fraction of variance due to u_i)				

08. Results of the Test for Correlated Random Effects (Hausman Test) (ROA)

```
28 . estimates store re
29 . hausman fe .
```

	Coefficients		(h-R) Difference	sqrt(diag(V_h-V_R)) S.E.
	(h) fe	(R) re		
hce	.0015665	.001645	-.0000785	.0000777
sce	.049165	.054755	-.00559	.0121314
rce	-.0653271	-.0633876	-.0019395	.0110295
cee	.5789544	.5626505	.0163039	.0240298

b = consistent under Ho and Ha; obtained from xtreg
 B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

$$\chi^2(4) = (b-B)' [(V_b - V_B)^{-1}] (b-B)$$

= 2.37
 Prob>chi2 = 0.6685

09. Results of Fixed Effect Model ROE

30 . xtreg roe hce sce rce cee, fe

```

Fixed-effects (within) regression          Number of obs   =    144
Group variable: company                 Number of groups =    18

R-sq:                                     Obs per group:
  within = 0.5994                         min =           8
  between = 0.7647                        avg =          8.0
  overall = 0.6861                        max =           8

corr(u_i, Xb) = 0.0886                    F(4,122)        =    45.64
                                           Prob > F         =    0.0000
    
```

roe	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
hce	.0023588	.0005789	4.07	0.000	.0012128	.0035047
sce	.0765889	.0470253	1.63	0.106	-.0165023	.1696801
rce	-.0923858	.0430443	-2.15	0.034	-.1775963	-.0071754
cee	.7558692	.0836018	9.04	0.000	.590371	.9213674
_cons	-.0738223	.0400725	-1.84	0.068	-.1531498	.0055051
sigma_u	.06243939					
sigma_e	.08052245					
rho	.37550312	(fraction of variance due to u_i)				

F test that all u_i=0: F(17, 122) = 4.48 Prob > F = 0.0000

31 . estimates store fe

10. Results of Random Effect Model ROE

32 . xtreg roe hce sce rce cee, re

```

Random-effects GLS regression          Number of obs   =    144
Group variable: company                 Number of groups =    18

R-sq:                                     Obs per group:
  within = 0.5985                         min =           8
  between = 0.7747                        avg =          8.0
  overall = 0.6910                        max =           8

corr(u_i, X) = 0 (assumed)                Wald chi2(4)    =   236.13
                                           Prob > chi2     =    0.0000
    
```

roe	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
hce	.002388	.0005595	4.27	0.000	.0012914	.0034845
sce	.097037	.0411467	2.36	0.018	.0163909	.1776831
rce	-.0795027	.0377343	-2.11	0.035	-.1534606	-.0055448
cee	.7631176	.070583	10.81	0.000	.6247776	.9014577
_cons	-.0924868	.0363752	-2.54	0.011	-.1637808	-.0211927
sigma u	.05819399					
sigma_e	.08052245					
rho	.34310039	(fraction of variance due to u_i)				

11. Results of the Test for Correlated Random Effects (Hausman Test) (ROE)

33 . estimates store re

34 . hausman fe .

	Coefficients		(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
	(b) fe	(B) re		
hce	.0023588	.002388	-.0000292	.0001486
sce	.0765889	.097037	-.0204481	.0227667
rce	-.0923858	-.0795027	-.0128831	.0207107
cee	.7558692	.7631176	-.0072484	.0448031

b = consistent under Ho and Ha; obtained from xtreg
 B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

$$\begin{aligned} \text{chi2(4)} &= (b-B)'[(V_b-V_B)^{-1}](b-B) \\ &= \mathbf{1.87} \\ \text{Prob>chi2} &= \mathbf{0.7601} \end{aligned}$$

A Comparative Analysis of Broadband Brand Engagement in Gujarat: A Consumer Perspective

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Abstract

In the digital age, broadband services have become essential for communication, employment, learning, and civic participation. As ever-increasing numbers make extensive usage of high-speed data connections, new communications providers compete to gain recognition by offering consumers better service. This study aimed to compare selected major players in the Indian broadband industry for their performance across six dimensions Brand Image, Service Quality, Price Value, Customer Support, Innovation, and Technology. This study deals extensively with all Four Dimensions of basic parameters such as Product Image (including Awareness), Service Quality being Perceived by Customers, Price, and Relative Importance of Other Major Competitive Advantages Such as Sales Services and innovations in Products. The findings from this study could be used as a starting point to gain more insights into customer-brand relationships and provide guidance regarding how brands should deal in today's fiercely competitive landscape.

The study is descriptive in nature. A survey of 100 broadband users in Gujarat has been conducted using a structured questionnaire. The inquiry concerned different internet services. By examining such factors as individual needs and wants for Internet use and opinions about service quality, cable operators can compare their offerings with those provided by competing companies. Additionally, the findings will aid service providers in identifying successful strategies and areas for improvement, ultimately enhancing their responsiveness to consumer needs in the digital age.

The study's findings reveal that younger users (under 25) are the primary consumers of broadband services. Longer-term plans, such as 12-month subscriptions, are most popular. GTPL leads in usage, followed by Jio and Airtel, with speed being the top priority for customers. Income influences broadband brand preferences, and broadband is mainly used for education, followed by work and gaming. Most respondents feel that the cost of broadband services is justified by the quality of service provided. These insights highlight key trends in broadband usage and consumer preferences.

Key Words: Broadband Service Provider, Consumer, Perception

Introduction

In the digital world that we live in, broadband services are one of the basic requirements of life, imparting skills for effective communication, and using information and knowledge resources for employment, learning, and civic participation. High-speed internet and its use are growing which means more businesses are entering this space to try and win over customers. They differentiate themselves in terms of service quality and brand experience. Recognizing consumer-brand relationship dynamics is primary for brand marketing strategy development as well as for loyal client-base establishment.

Broadband is a high-speed Transmission of multimedia data. It may be as simple as a high-speed connection to the internet all the time. Ads wireless networks, DSLs, fibers, cable modems, and satellites.

This research will compare the Broadband brand connections by analyzing what sells consumers with the different brands of this product. Different dimensions such as brand image, service quality, pricing, customer support, and technological innovation will be used to search for the selling points and weak points of various brands.

The comparative study will be carried out among various broadband service providers who are functioning in Gujarat, which help us in the analysis of brand association of different companies as a whole. Using surveys, interviews and data analytical techniques, this research aims to extract knowledge concerning consumer-brand relationships, loyalty, satisfaction, and trust.

In addition, this research will investigate how marketing strategies, advertising campaigns, and customer engagement movements influence consumer perceptions and brand preference in the broadband sector. For service providers: The results help service providers understand where they can emulate success as part of their effort to win in the marketplace and remain more responsive to consumers in a digital age.

Literature Review

Singh (2023) carried out research based on the opinions of 200 Reliance Jio users in Ghaziabad and tried to understand what consumers felt about it as a service. As per the finding, 168 of the over 200 customers surveyed "expressed high levels of satisfaction with Reliance Jio services. The research concludes customer satisfaction towards Reliance Jio is trending upward and discovers the factors contributing to customer satisfaction.

The researcher (Zahoor, 2015) conducted an interview of HNI i.e., High Net Worth Individuals, JKBank Corporate plan users, and Dongle customers to find out the satisfaction level among Aircel customers. The investigation discovered the needs of customers in various segments and the problems they face, such as network coverage, internet speed, and customer service. Based on customer feedback, recommendations were made to enhance these aspects.

Such (2013) investigated the relationship between customer happiness and loyalty in Bangladesh's mobile telecom sector (Jahan and Hossain Research, 2013). How did loyalty and consumer satisfaction differ by telecom provider? The study most likely looked at how customer satisfaction ratings impacted the likelihood of customers to Pawan but did not provide exact data. This research paper studies the impact of Reliance Jio GigaFiber on Indian internet service providers.

Kalyani (5th October, 2019) In this research report, the impact of Reliance Jio Giga Fiber on the Indian internet service provider market is examined. The main focus is the technology examination and consumer preference study through which the competition between Reliance Jio and established firms like Airtel Telecom. The article you summarised is about a study that analyzes the impact of Jio

GigaFiber: Reliance Jio's new fiber optic internet connectivity in India and how ISPs in India have been affected. Key points include:

Dependency Now Jio Giga Fiber, a major player in the Indian mobile industry has made its entrance into wired internet space. With affordable high-speed internet plans come with Jio Giga Fiber.

Fiber optics have several advantages over traditional copper cable internet such as higher capacities, longer transmit distances, and immunity from electromagnetic interference.

Jio GigaFiber's introduction into the market made the author curious about how it would change customer switching behavior. Their method will be to ask consumers about their preferences for internet service while remaining loyal to their telecom service providers.

In Coimbatore city, they undertook a research on Internet Service Providers or ISPs by interviewing around 200 people. People in general were satisfied with connectivity. However, some users experienced connection issues and felt billing could be clearer and more affordable.

This research highlights the need for reliable and cheap internet to keep customers happy. Factors like fast speeds, helpful customer service, and easy-to-understand pricing are important. Such factors as high speeds, good contact possibilities, and understandable prices should not be neglected.

Research Gap and Research Problem

Available literature studies have examined customer satisfaction and preferences in the telecommunications and broadband sectors, in this study our focus was on demographic factors having impact on selection and usage of broad band services. Also interested in knowing imopact of cost factor on selection of broad band brands.

Our major problem was to know the impact of demographic variable on the selection of broadband brand and also preferences towards it. Along with customer preferences we were looking for the performance of the broadband and role fo the cost factor in the preference towards it.

Research Objectives and Methodology

Researchers aim was to know customer perception and preferences towards various brands of broadband connections. This research also focuses on comparison of various brands of broadband connections available in Gujarat state.

It is hard to pick the best broadband provider. There are many out there claiming they're the fastest or the most reliable. This research aimed to help by comparing different broadband brands. Objectives are achieved by looking at things like how fast they are, how often they break down, how good their customer service is, and if they are worth the price. This study enables people to choose the right broadband for them.

This study is descriptive in nature it requires surveys and fact-finding inquiries of different kinds.

Here, the Researcher focused on the following variables

- Customer Preference
- Performance of Broadband
- Customer Perception
- Availability of Broadband

In Gujarat state, there were 100 customers of Broadband Service users who were contacted and a survey was conducted on their experiences, preferences, and perceptions towards different broadband brands. The method used for sample selection was non-probability convenience sampling and a survey was conducted for data collection purpose using a structured questionnaire.

As researcher has followed non probability convenience sampling, it is not necessary to justify the sample size but with time and cost limitations, researchers have tried to consider sample size which is statistically justified for taking any statistical analysis. Further more samples have been chosen keeping in mind nuanced analysis of user experiences, regional disparities, and the impact of local policies.

We are hoping that this research would be beneficial to the Broadband Service Users, and Broadband Service Provider Companies.

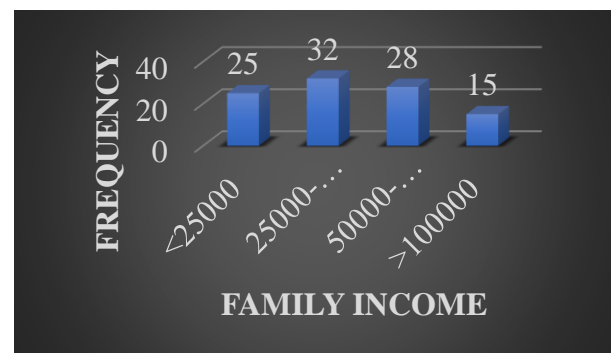
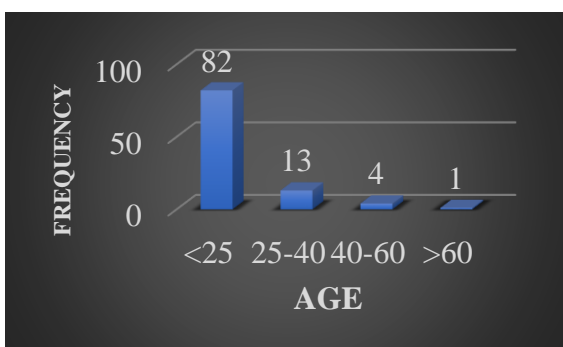
Hypothesis

H₁: There is a significant difference in the preference for Broadband brands among Income groups.

Data Analysis and Interpretation

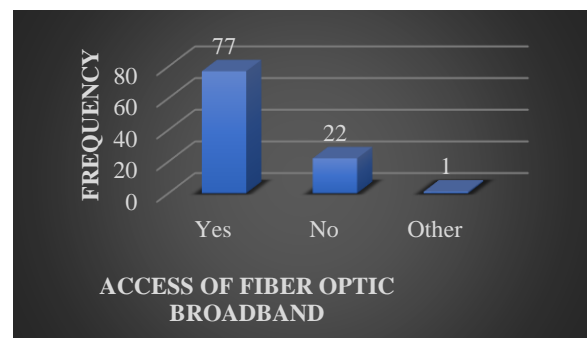
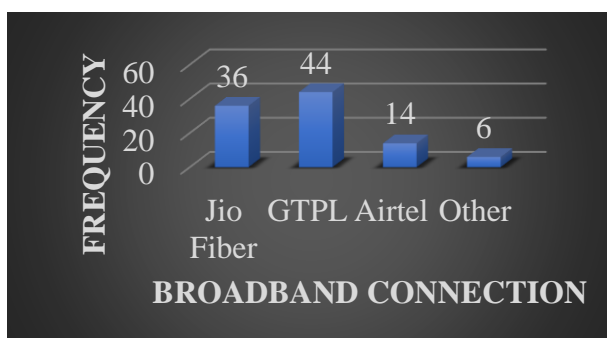
Demographic Profile of Respondents

Age

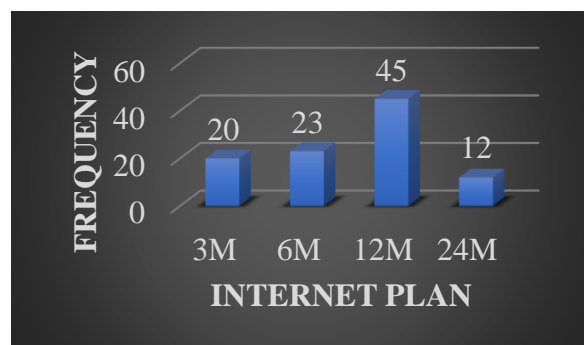
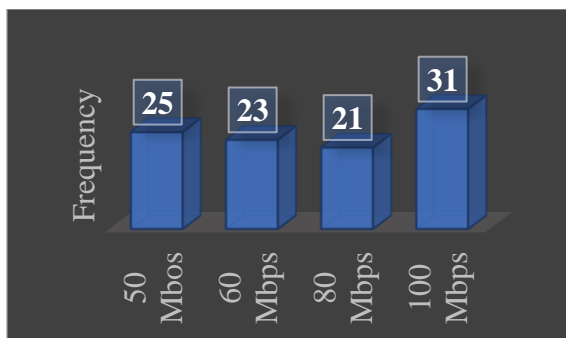


Majority of respondents were from the age group 25 or below followed by the age group 25-40, 40-60, and minimum respondents from the age group more than sixty. In the case of income, most of the respondents were from the income group Rs. 25000 to Rs. 49000, Followed by Rs. 50000 to Rs.99000, less than Rs. 25000, and minimum respondents from the income group more than Rs. 1,00,000.

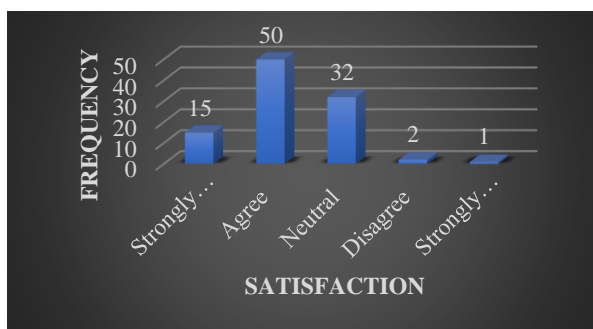
Looking at the above chart it can be concluded that the results of this study are majorly representing the suitability for age groups less than 25 and income groups Rs. 25000 to Rs. 49000 & Rs. 50000 to Rs.99000.



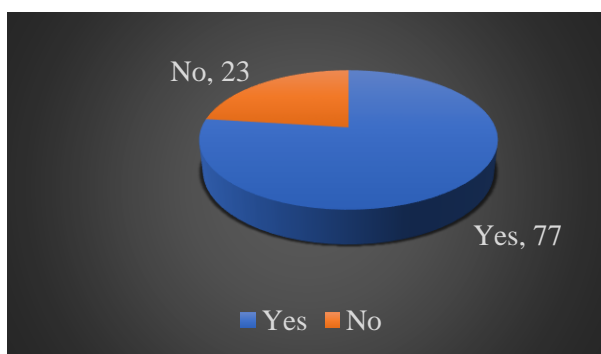
The majority of respondents prefer Jio and GTPL Broadband, as suggested by a question asked about their current broadband connection. 77 out of 100 respondents answered 'Yes' to the question of having access to fiber optic internet in their location. This implies that fiber optic broadband is generally accessible in Gujarat.



According to the response received, the most popular option is a 12-month term plan (frequency of 45), which is followed by 3-month (frequency of 23) and 24-month (frequency of 12) plans. The graph indicates that the most popular plans are those with speeds of 50 Mbps and above (25 for 50 Mbps, 23 for 60 Mbps, 21 for 80 Mbps, and 31 for 100 Mbps). This suggests that customers are looking for faster speeds.



Speed is the most decisive component of a broadband connection, based on the responses received. Majority of respondents have chosen speed as the most important factor when choosing the brand for broadband connection. Also More than Fifty percent of the respondents express a high level of satisfaction with their broadband connection. Hence, it can be concluded that people are looking at factors like speed followed by service, money/charge, and other factors while choosing the broadband service.



Majority of respondents who were using a broadband connection, do so for work and education; the number of people who use it for gaming and other activities is smaller in comparison. Again 77% of participants found the cost worth the usage of Broadband.

Statistical Analysis

ANOVA

Output Table:

Level of Significance	Significant Value	Result
0.05	P = 0.001434	H ₀ : Rejected

Result Indicates a statistically significant difference between the group means at a commonly used alpha level of 0.05. Since F is greater than F crit, we reject the null hypothesis of equal means.

P-value (0.001434194) < 0.05:

We can conclude that family income is having a significant role in the preferences towards the broadband connection brand.

Key Findings

- Younger users (under 25) are the predominant users of broadband
- Longer-term plans (12 months) are more popular among users
- GTPL stood out with the highest usage followed by Jio and Airtel. When purchasing a Broadband connection, Speed is the most important factor considered by the respondents.
- Income-wise preferences towards the broadband brand differ
- Education is the primary use of the Broadband connection, followed by work and Gaming.
- A significant majority believe that the cost of broadband services is justified by the service provided

Limitations, Policy Implication and Scope of Study

The limitations of broadband connections are that its speeds could be available only intermittently during peak times, with coverage that is generally short because of lacking infrastructure in rural areas. Bad weather can cut off the service due to interference, and even major users have constraints with capped data or throttling. The policy implications are government support to invest in developing infrastructure, especially in underserved areas, while encouraging competition to better enhance services and reduce their prices. Important issues include regulations on practices such as data throttling and policies to subsidize access to lower-income households. Future scope includes research into better infrastructures for rural areas, finding the role of new technologies, and finding the social and environmental impact of broadened broadband access.

Conclusion

In conclusion, the Broadband landscape is all about the different preferences and needs of users. Younger demographics (below 25) dominate the market and prefer longer-term plans. GTPL is the leader in usage followed by Jio and Airtel as speed is the top priority for consumers. Preferences vary across income segments, it's a segmented market. Broadband is used for education work and gaming, it's a multi-utility product in daily life. Despite the cost, a majority feel the cost is justified by the service they get, broadband is an essential part of modern connectivity.

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