

CHAPTER THREE

INTELLECTUAL CAPITAL DISCLOSURE PRACTICES:

SURVEY BASED EMPIRICAL ANALYSIS

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3.1. Introduction

The previous Chapter examines the term intellectual capital in practice from the mid of 20th century. Owing to the shift from production based to knowledge-based industry, intellectual capital has emerged as the core value for the organisation necessitating a need to measure intellectual capital and disclose it in the annual report. Various studies have been conducted to examine the disclosure practices of business organization including components considered for disclosures of intellectual capital in annual reports revealing poor disclosure practices. This chapter analyzes the content of disclosure and disclosure practices followed in relation to intellectual capital. As already indicated input from researchers, academicians, and professionals relevant to intellectual capital disclosure and its variables have been gathered through research instrument for further probing. Furthermore, this collected information as well as earlier research outcomes of various social scientists, researchers, professionals regarding identifying intellectual capital, its value, its disclosure and impact on financial performance of the firm have been analysed.

In the present chapter the components given importance in the disclosure of intellectual capital, practices followed and opinions from respondents have been identified. The chapter is divided in three parts. Part 1 deals with identifying the companies disclosing intellectual capital in their annual report, part 2 deals with detailed analysis of disclosure of intellectual capital and its components in annual reports. Part three deals with survey study where opinions of the respondents in relation to Intellectual Capital is collected and analysed.

In this first part researcher has identified the companies disclosing Intellectual Capital in their annual reports and what components of intellectual capital are disclosed. According to Abeysekara (2006), knowledge intensive companies depend more on Intellectual capital rather than other balance sheet assets to create value (Abeysekara 2006 as cited by Mamun & Aktar, 2020). Although intellectual capital may not always be apparent, its shortcomings can be felt, owing to it's intangible nature. It is implied that organization's performance or outcomes suffer when such capital is lacking. It is essential that a company's annual reports should disclose the various aspects of intellectual capital so that shareholder along with other stakeholders struggling for credible and timely information can take informed decisions. Disclosure about Intellectual Capital is treated as

one of the means of improving transparency by reducing information asymmetry problems between management and other corporate stakeholders (Johanson 2003, as cited by Mamun & Aktar, 2020). When combined with relevant data, the following queries have been posed.

- ✓ ***Do corporate entities disclose Intellectual Capital in their annual report?***
- ✓ ***Do corporate houses put numbers for Intellectual Capital?***

Content analysis has been carried out to identify the entities that disclose the term Intellectual Capital in their annual report.

3.2. Disclosure Practices of Intellectual capital

To conduct a detailed content analysis, it is necessary to choose a sample from the population of all companies in India. These companies can be categorized as either listed or non-listed on prominent exchanges such as BSE/NSE. Among the total number of companies, a notable statistic reveals that there are 6,819 companies listed on the National Stock Exchange (NSE) and Bombay Stock Exchange (BSE) (“Number of companies listed in NSE and BSE across India FY 2008-2022,” n.d.), while the remaining companies are not listed on these exchanges. The National Stock Exchange (NSE), known as one of India’s leading stock exchanges, has organized equity scripts into various indexes, including Nifty 50, Nifty Auto, Nifty Bank etc.. Among these indexes, the Nifty 50 Index stands out as a highly diversified index, encompassing 13 sectors of the economy. It represents approximately 62% of the free float market capitalization of stocks listed on the NSE as on September 30, 2022. As it covers maximum market capitalization companies, this Nifty 50 index companies are selected as sample for study of disclosure practices.

This analysis of Nifty 50 companies has given a general idea of the practices followed by listed companies in India. The detailed content analysis is carried out by using descriptive analysis and quantitative analysis.

3.3 Extent of disclosure of Intellectual capital in Annual reports

To begin with, a preliminary survey has been carried out to understand the intellectual capital disclosure practices followed by the selected companies. Research has been directly conducted by collecting the annual reports of all the companies listed in Nifty 50 index for the year 2020-21. Each company reports as available on their respective site have been downloaded. Data has been

collected by entering the word ‘intellectual capital’ in the ‘find column’ in the downloaded reports. Later, once the word has been identified a detailed documentary analysis has been conducted to take the idea of how and to what extent this Intellectual capital has been disclosed. Relevant information has been collected, compiled, and documented by considering the headings under which intellectual capital has been disclosed. The analysis includes, which information has been disclosed under intellectual capital and which items have been disclosed under components other than intellectual capital.

3.4 Extent of Intellectual capital disclosure

The following table discloses the list of Nifty 50 companies selected to analyse the disclosure practices.

Table 3.1
Table showing list of Nifty 50 companies

Name of the Company			
SBI Life insurance Company Ltd	Eicher Motors Ltd.	Tech Mahindra Ltd.	Titan Company Ltd
Bajaj Finserv Ltd.	Cipla Ltd	Gail	Britannia Industries Ltd.
Hindalco Industries Ltd	UPL	ICICI Bank Ltd	Nestle India Ltd.
Tata Motors Ltd.	State Bank of India	Kotak Mahindra Bank Ltd	ITC Ltd.
Larsen & Turbo Ltd	Maruti Ltd	Infosys Limited	JSW Steel Ltd.
Coal India Ltd.	Tata Consultancy Services Ltd	Bajaj Finance Ltd.	Dr. Reddy Laboratories Ltd.
Oil and Natural Gas Corporation Ltd.	Hero MotoCorp Ltd.	NTPC Limited	HDFC Life Insurance Company Ltd.
Housing Development Fin. Corp. Ltd.	Sun Pharmaceuticals Industries Ltd.	Divis laboratories Ltd.	Bajaj auto Limited
Axis Bank Ltd.	Asian Paints Limited	Adani Ports and Special Economic Zone Ltd.	Power Grid Corporation of India Ltd.
Reliance Industries Ltd	UltraTech Cement Ltd	Indian Oil Corporation	HCL Technologies Ltd.
Indusland Bank Ltd.	Bharat Petroleum Corporation Limited	Tata steel	ACC LTD
HDFC Bank	Bharati Airtel ltd.	Wipro Ltd.	Mahindra and Mahindra Ltd.

Grasim Industries Ltd	Hindustan Unilever Ltd.		
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(Source: Raut, 2021, (“Nifty 50 stock list - all Nifty 50 companies listed on NSE,” n.d.))

The total 50 companies are distributed in the major sectors, presented in the table below:

Table 3.2

Table showing sector wise classification of Nifty 50 companies.

	Sectors	Name of the Companies											Total
1	Financial Services	HDFC Bank	ICICI Bank Ltd	Axis Bank Ltd.	State Bank of India	Kotak Mahindra Bank Ltd	Bajaj Finance Ltd.	Indusl and Bank Ltd.	Bajaj Finserv e Ltd.	HDFC Life Insurance Company Ltd.	SBI Life insurance Company Ltd	Housing Development Fin. Corp. Ltd.	11
2	Oil & Gas	Reliance Industries Ltd	Coal India Ltd.	Oil and Natural Gas Corporation Ltd.	Bharat Petroleum Corporation Limited	Indian Oil Corporation	Gail						6
3	Information Technology	Infosys Limited	Tata Consultancy Services Ltd	HCL Technologies Ltd.	Tech Mahindra Ltd.	Wipro Ltd.							5
4	Construction	Larsen & Turbo Ltd											1
5	FMCG	ITC Ltd.	Hindustan Unilever Ltd.	Nestle India Ltd.	Britannia Industries Ltd.								4
6	Telecommunication	Bharati Airtel ltd.											1
7	Consumer Durables	Asian Paints Limited	Titan Company Ltd										2
8	Automobile	Mahindra and Mahindra Ltd.	Maruti Suzuki India (MAR UTI)	Tata Motors Ltd.	Bajaj auto Limited	Eicher Motors Ltd.	Hero MotoCorp Ltd.						6
9	Healthcare	Sun Pharmaceuticals	Dr. Reddy Laborat	Cipla Ltd	Divis laboratories Ltd.	UPL							5

		Industries Ltd.	ories Ltd.										
10	Power	NTPC Limited	Power Grid Corporation of India Ltd.										2
11	Metals & Mining	Tata steel	Hindalco Industries Ltd	JSW Steel Ltd.									3
12	Construction Materials	UltraTech Cement Ltd	Grasim Industries Ltd	ACC LTD									3
13	Services	Adani Ports and Special Economic Zone Ltd.											1
													50

(Source: Compiled by Researcher)

The above table shows the companies under each major sector, where maximum companies are from the financial service sector, followed by automobile and oil and gas sector. While for the service sector, construction sector and telecommunication sector only one company is allocated namely Adani Ports and Special Economic Zone ltd, Larsen & Turbo Ltd and Bharati Airtel Ltd respectively.

All these above companies are considered for detailed content analysis.

1. The first phase of the study includes disclosure of the term Intellectual capital in their respective annual reports. Hence the survey is carried out by substituting **‘Yes’** if the company discloses Intellectual capital and **‘No’** if that term is not disclosed.

The following table gives ideas about the companies recognizing intellectual capital in their annual report.

Table 3.3**Table showing disclosure of ‘Intellectual Capital’ in Annual Report of Companies**

Sr. No.	Name of the company	Yes	No	Sr. No.	Name of the company	Yes	No
1	SBI Life Insurance Company Ltd	√		26	Hindustan Unilever Ltd (HUL Ltd).		X
2	Bajaj Finserv Ltd.		X	27	Tech Mahindra Ltd.	√	
3	Hindalco Industries Ltd	√		28	Gas Authority of India Limited (GAIL)		X
4	Tata Motors Ltd.	√		29	ICICI Bank Ltd	√	
5	Larsen & Turbo Ltd	√		30	Kotak Mahindra Bank Ltd		X
6	Coal India Ltd.		X	31	Infosys Limited		X
7	Oil and Natural Gas Corporation Ltd(ONGC).		X	32	Bajaj Finance Ltd.		X
8	Housing Development Fin. Corp. Ltd.		X	33	NTPC Limited	√	
9	Axis Bank Ltd.		X	34	Divis laboratories Ltd.		X
10	Reliance Industries Ltd	√		35	Adani Ports and Special Economic Zone Ltd.	√	
11	Indusland Bank Ltd.		X	36	Indian Oil Corporation	√	
12	HDFC Bank	√		37	Tata steel	√	
13	Grasim Industries Ltd	√		38	Wipro Ltd.	√	
14	Eicher Motors Ltd.	√		39	Titan Company Ltd	√	
15	Cipla Ltd	√		40	Britannia Industries Ltd.		X
16	UPL	√		41	Nestle India Ltd.		X
17	State Bank of India		X	42	ITC Ltd.	√	
18	Maruti Ltd	√		43	JSW Steel Ltd.		X
19	Tata Consultancy Services Ltd	√		44	Dr. Reddy Laboratories Ltd.		X

20	Hero MotoCorp Ltd.	√		45	HDFC Life Insurance Company Ltd.		X
21	Sun Pharmaceuticals Industries Ltd.		X	46	Bajaj auto Limited		X
22	Asian Paints Limited	√		47	Power Grid Corporation of India Ltd.		X
23	UltraTech Cement Ltd	√		48	Hindustan Computers Limited (HCL Technologies Ltd).		X
24	Bharat Petroleum Corporation Limited (BPCL)		X	49	Associated Cemented Companies (ACC Ltd)		X
25	Bharati Airtel ltd.		X	50	Mahindra and Mahindra Ltd.	√	
					Total	25	25

(Source: Compiled by Researcher, √ = Indicates Yes it discloses, X = Indicates No it doesn't disclose)

Based on the disclosure, it is observed that out of the top 50 companies only 25 companies have disclosed the term Intellectual capital, implying that only 50% of the listed Nifty 50 companies recognized this as material information to be communicated to their stakeholders. The intention of disclosing this term is to show that the company possess such precious and important assets in their firm which creates competitive advantage.

2. Second phase of the survey is to identify out of 25 companies that are not disclosing Intellectual Capital, the disclosure of the components of Intellectual Capital like Human capital and/or structural capital and/or relational capital term. These components have already been discussed in detail in the second chapter of research endeavor. If the company has disclosed these components, then also it can be said that the company has disclosed intellectual capital in the form of its components. If a company has not disclosed such terms, it implies that companies have not recognized such important assets worth disclosing and communicating as a part of annual report. The following table provides an overview of the presence or absence of distinct types of capital named Human Capital, Structural Capital, and Relational Capital in various listed companies who are not disclosing Intellectual capital in their annual report.

Table 3.4**Table showing list of the name of the companies not disclosing Intellectual Capital**

	Name of the company	Yes			No
		Human Capital	Structural Capital	Relational capital	
1	Bajaj Finserv				X
2	Coal India				X
3	ONGC				X
4	Housing Development	√	X	X	
5	Axis Bank				X
6	Indusland Bank	√	X	X	
7	SBI	√	X	X	
8	Sun Pharma				X
9	BPCL				X
10	Hindustan Unilever Ltd				X
11	Gail				X
12	Kotak Bank				X
13	Infosys Ltd				X
14	Bajaj Finance				X
15	Divis lab				X
16	Britannia Ltd				X
17	Nestle Ltd				X
18	JSW Steel	√	X	X	
19	Dr. Reddy				X
20	HDFC Life	√	X	X	
21	Bajaj auto				X
22	PGCIL				X
23	HCL	√	X	X	
24	ACC Ltd				X
25	Bharati Airtel				X
	Total	06			19

(Source: Compiled by Researcher, √ = Indicates Yes it discloses, X = Indicates No it doesn't disclose)

The above table reveals that from 25 companies not disclosing Intellectual capital, researcher has further analysed the disclosure of dimensions of intellectual capital, termed as Human Capital, Structural Capital and Relational Capital. The detailed analysis shows that from 25 companies only 6 companies used the term human capital in its annual report instead of Intellectual Capital but failed to disclose other two dimensions of intellectual capital -structural capital and relational capital. The remaining 19 companies failed to disclose any of the dimensions in the annual report reflecting unawareness on the part of

the companies of the other dimensions or that these still have not recognized the other dimensions of intellectual capital. The disclosure practices of the above results have been presented in the table below.

Table 3.5
Table showing sector wise distribution of companies who are not disclosing Intellectual Capital in their annual report.

Name of the companies	Companies not Disclosing	Companies Disclosing	Total count
Financial Services	8	3	11
Oil & Gas	4	2	6
Healthcare	3	2	5
FMCG	3	1	4
Information Technology	2	3	5
Metals & Mining	1	2	3
Automobile	1	5	6
Construction Materials	1	2	3
Telecommunication	1	0	1
Construction	0	1	1
Consumer Durables	0	2	2
Power	1	1	2
Services	0	1	1
Total	25	25	50

(Source: Compiled by Researcher)

The above table unveils that maximum companies not disclosing Intellectual capital belong to financial service sector and oil and gas sector, while consumer durables sector, construction sector and service sector companies disclose intellectual capital in their annual report.

Out of the 25 listed companies, only 6 companies namely (Housing Development, Indusland Bank, SBI, JSW Steel, HDFC Life, and HCL) exhibit Human capital. Remaining companies, 19 in total, lack Human Capital, Structural capital and Relational Capital, indicating a potential gap in disclosing intellectual capital and its components, while 06 companies disclosing human capital fail to disclose their internal capital and their relationships with external stakeholders. The sector wise distribution of companies that disclose Human capital instead of Intellectual Capital are presented in the table below:

Table 3.6

Table showing sectors, disclosing Human Capital instead of Intellectual Capital

Name of the sector	Total No.
Financial Services	4
Information Technology	1
Metals & Mining	1
Total	6

(Source: Compiled by Researcher)

This shows that 50% of companies not disclosing Intellectual Capital of financial sector and Information technology sector are aware of the term human capital and they disclose human capital in annual reports instead of Intellectual capital.

It can be ascertained that though these companies are aware of human capital and disclose it in their annual report yet not as part of Intellectual Capital.

This observation aligns with findings from numerous studies, such as those conducted by (Saenz, (2005), Gan & Saleh (2008), M. Joshi, Cahill, & Sidhu, (2010), Wang, (2011), Rehman, Chaudhary, Rehman, & Zahid (2011), Maditinos, Chatzoudes, Tsairidis, & Theriou (2011), Ahangar (2011), and Mosavi (2012)), among others. These studies have sought to establish a relationship between human capital efficiency and performance variables, consistently identifying a positive correlation and significant impact on selected performance metrics within companies. Consequently, it is evident that the recognition of human capital in annual reports corresponds to its influence on company performance. However, many companies disclose human capital primarily in terms of employee numbers rather than its monetary value. This highlights the deficiency in the inclusion of the monetary value of human capital within annual reports. Subsequently, following the analysis of companies that do not disclose intellectual capital, researchers now endeavor to examine the substance of intellectual capital within the annual reports of companies that do disclose such terms.

Detailed Content Analysis: The detailed analysis of Intellectual capital disclosure practices for the selected companies disclosing the term intellectual capital in their annual report. For this purpose, each such company (25 companies) detailed content analysis has been carried out probing how and what is disclosed under the term Intellectual capital. The findings revealed that companies disclosing Intellectual capital have disclosed it under heading ‘Input’, ‘Output’ and ‘Outcomes’. The following table presents a concise analysis of various companies in terms of their input

(resources or activities related to Intellectual Capital), output (tangible results or outcomes), and outcomes (impacts) related to Intellectual Capital. Below table is a summary of the key findings:

Table 3.7

Table showing detailed content disclosure of Intellectual Capital

	Name of the company	Input	Output	Outcomes
1	SBI Life insurance	Expenditure done on technology and software (in billions)	1. New product approved. 2. Renewal premium collected digitally, individual applications digitally.	Strong responses to new launches, healthy traction on digital Platforms
2	Hindalco	Amount (in crores spent on R&D), patents filed	3. Patents granted. 4. New product launched.	increase in business due to new product
3	Tata Motors	Only the term used as intellectual, and the amount spend on R&D	1. Various places they used Intellectual property and recorded as intangible assets	
4	L&T	Only once Intellectual capital written in paragraph		
5	Reliance	Amount spent in R&D, number of researchers and scientists, engineers in technical roles	1. Patents granted 2. Patents filed 3. Startups done	1. Information about leveraging Intellectual capital 2. Research and technology
6	HDFC Bank	Resources: Digital enterprise: Advanced AI and ML capabilities		- Brand Valuation: \$20.2 Billion - Strengthening of core and creation of digital stack

		• Credit policy and underwriting skills • Technology Focus • Risk Management framework • Collaboration with fintech and start-ups • Capacity building on climate risk		• Attracted market-leading skills in areas such as data analytics, IT, equities, and advisory solutions • No of APIs active on bank's gateway: 178
7	Grasim	R&D expenditure, patent applications	1. New product launched. Exclusive partnership	
8	Eicher Motors	• Research and Development (R&D) centers • Internal and External audits conducted. • R&D employees. • R&D expenditure.	1. New vehicle launched. 2. New accessories launched. 3. Reduction in product development cycle. 4. Improved fuel economy of motorcycles	Innovation for digital age with an emphasis on strong commitment, customer comfort and experience
9	Cipla	R&D colleagues, investment in R&D, Investment in technologies to advance new product developments Maintenance and protection of	Launch of new products, patents filed globally. Dedicated and focused approach towards innovation patents granted. R&D units, new products launched, R&D expenditure	

		intellectual property rights.		
10	UPL	R&D facilities, Amount spend on R&D, patents granted, R&D professionals		
11	Maruti Ltd	R&D investment R&D facility at Gurugram and Rohtak, India, R&D engineers • Product licenses	• Reduced product development cycle • Improved vehicle fuel economy, lower emissions, and enhanced safety	Patent filed and granted. Reduced product development cycle Improved vehicle fuel economy, lower emissions, and enhanced safety
12	TCS	Patents applied, Patents granted, academic partnerships and ecosystem, startups in COIN program, , innovators nurtured till date		
13	Hero Motor	R&D investments, No. of team at R&D centers		
14	Asian Paints	Amount spent on R&D, patents filed, No. of scientist, investment in Information technology,	Patents granted; new products developed.	

15	Ultra Tech Cement	Amount spent on R&D, no of initiatives undertaken, new products developed		
16	Tech Mahindra	R&D expense to build competitive advantage, training executives on innovative technologies, ideas generated, ideas evaluated and implemented international and national campuses are connected for joint innovation, students interned		
17	ICICI	adoption of emerging technologies, Augmenting existing digital products, Entering mutually beneficial partnerships, improving customer experience, investments in technology, exploring innovative ideas and leveraging partnerships to		

		maintain our leadership		
18	NTPC	R&D expenses, R&D personnel, accredited Labs, Apex learning and development (L&D) center,	Patents Granted, Patents Under Process, Copyrights Granted And Under Process • E-Library Of E-Books, Articles, Reports And Journals, Business Done By Consultancy, Expenditure On IT, Patents Filed, ISO Accredited Labs, Revenue From Consultancy Division	
19	Adani Ports	Automated cargo tracking Single-window service Data driven analytics. Cost tracking tool Container Tracking System Service portal. Systematic data recording and monitoring Lower turnaround time One-stop service Systematic data management and presentation Real-time cost estimation Faster operations Ease of doing business		

		Decision making Customer trust		
20	IOC	Patents granted, Team size at R&D center, Amount spend on R&D, Patents filled, Total effective patents		
21	Tata steel	Amounts spend on R&D, patents granted, new products developed		
22	Wipro	Patents granted, Patents filled, R&D expense		
23	Titan	R & D Expense		
24	ITC	To own intellectual capital is only mentioned rest R&D Expense is mentioned under intellectual property.		
25	Mahindra and Mahindra	Spend on R&D in amount and in %, Patents Applied, Patents Granted, Design Registrations Granted.	New Products Launched: Auto, Tractor, Farm Equip, New Technologies.	

(Source: Compiled by Researcher)

From the above analysis Adani Ports, IOC, Tata Steel, Wipro Ltd, Titan, ICICI bank, Tech Mahindra, Ultra Tech Cement, Hero Motor, UPL and L&T have been identified as disclosing Intellectual Capital in the form of Specific amount spent on Research and Development expenses, Patents filled, designed registered and even the new products developed.

Other companies like SBI Life Insurance, Hindalco, Reliance, HDFC Bank, Eicher Motors and Maruti Ltd, are disclosing the information under three subheadings like under Input, Output and Outcomes:

Input – The information includes –

- ✓ Investment done under Research and Development
- ✓ Patents filled
- ✓ Number of employees under Research and Development(R&D) and
- ✓ Number of centers under R&D.
- ✓ Single-window service, Data driven analytics, Cost tracking tool, Container Tracking System
- ✓ Systematic data recording and monitoring
- ✓ One-stop service
- ✓ Real-time cost estimation
- ✓ Faster operations
- ✓ Ease of doing business
- ✓ Decision making

Output - The information includes –

- ✓ New products launched – result of R&D expenditure
- ✓ Patent granted - result of R&D expenditure
- ✓ Business revenue increased – result of new product launched.
- ✓ Reduction in product development cycle.
- ✓ Patents Granted, Patents under Process, Copyrights Granted and under Process, E-Library of E-Books, Articles, Reports and Journals, Business done by consultancy, Expenditure on IT, Patents Filed, Revenue from Consultancy Division

Outcomes – The information includes –

- ✓ Strong responses to new launches, healthy traction on digital Platforms

- ✓ Information about leveraging Intellectual capital
- ✓ Research and technology
- ✓ Brand Valuation
- ✓ Attracted market-leading skills in areas such as data analytics, IT, equities, and advisory solutions
- ✓ Innovation for digital age with an emphasis on strong commitment, customer comfort and experience
- ✓ Patent filed and granted.
- ✓ Reduced product development cycle
- ✓ Improved vehicle fuel economy, lower emissions, and enhanced safety

From this analysis it can be concluded that companies are disclosing the Intellectual capital under separate headings but the information what they are disclosing can be classified as under:

1. Amount spent on Research and Development
2. Number of Research and Development centers.
3. Number of employees under Research and Development centers.
4. Patents filled and granted.
5. New products launched.
6. Revenue and increase in business due to new products launched.
7. Ideas developed and implemented.
8. Improving resources and technology focus

The following table represents academic information regarding various aspects of research and development (R&D) activities among a set of companies.

Table 3.8
Table showing overview of content analysis

Information disclosed	Name of the companies
Amount spent on Research and Development	Hindalco, Tata motors, Reliance, Grasim, Cipla, Eicher motors, UPL, Maruti Ltd, Hero Motor, Asian Paints, Ultra Tech Cement, Tech Mahindra, NTPC, IOC, Tata Steel, Wipro, Titan, ITC, Mahindra, and Mahindra
Number of Research and Development centers	Cipla, Eicher motors, Hero Motor

Number of employees under Research and Development centers	Reliance, Cipla, Eicher motors, Asian Paints, NTPC, IOC
Patents filled and granted	Hindalco, Reliance, Grasim, Cipla, TCS, Asian Paints, NTPC, IOC, Tata steel, Wipro, Mahindra, and Mahindra
New products launched	SBI life Insurance, Grasim, Cipla, Eicher motors, Maruti Ltd., Ultra Tech Cement, Tata steel
Revenue increase in business due to new products launched	Hindalco
Ideas developed and implemented	Tech Mahindra,
Improving resources and technology focus	HDFC bank, ICICI, Adani Ports,

(Source: Compiled by Researcher)

From the above analysis it can be said that under Intellectual Capital, companies have given more importance to Research and Development expenses and the employees working under it. While if we see the acceptance of Intellectual Capital by the companies, all 25 companies have disclosed in the annual reports separately. Under the value creation model by SBI Life Insurance has disclosed under value creation model whereas Hindalco, Asian Paints and other companies have disclosed it as ‘our capital’.

This information provides insights into the R&D investments, activities, and outcomes of these companies, shedding light on their innovative strategies, resource allocations, and technological advancements establishing that Intellectual capital is strongly correlated with the Research and Development Department of an organisation.

Based on the above analysis the answers to the above questions are as follows:

1. Corporate houses are unable to assign numbers to Intellectual capital. They present intellectual capital in the form of input and output relating to research and development expenses.
2. All Corporate houses failed to recognize intellectual capital in their annual reports.
3. None of the corporate houses recognize intellectual capital in their financial statements.

On these grounds it can be theorized that corporate entities provide information concerning expenses incurred on innovation, initiatives and the patents filed and granted. However,

intellectual capital encompasses more than just research and development (R&D) and patents; it also encompasses relational capital, structural capital, and human capital. Consequently, there is an urgent need to investigate the extent to which companies disclose information pertaining to these three classifications.

3.5 Survey of Items of Intellectual Capital in Nifty 50 companies

As discussed earlier, in this part researcher has shown disclosure analysis of the different items pertaining to different components of Intellectual Capital. The preceding analysis has revealed a disparity among companies in terms of their disclosure of intellectual capital, with some firms providing comprehensive disclosures while others not. As asserted by (Datta (2014)), in the knowledge economy, intellectual capital is deemed essential for the competitiveness of companies across various industries. Consequently, there is an obligation for companies to disclose their intellectual capital in their annual reports. The subsequent phase of the study aims to identify the disclosure practices of specific items of intellectual capital by companies in their annual reports, with the objective of attaining a competitive advantage.

The question thus arises:

Do corporate houses disclose distinct items of intellectual capital in their annual reports?

To answer the above question the following objective of the study becomes:

- ✓ To analyze the extent of disclosure practices of different items of Intellectual capital made by leading Indian Companies in their annual reports.

To achieve the said objective content analysis from the annual reports of all Nifty 50 companies has been undertaken. The extent of Intellectual capital disclosure practices followed by the companies in the past five years from 2016-17 to 2020-21 of study has also been examined. All 250 annual reports of the companies have been analysed to collect information of the disclosure of items of intellectual capital of the companies. For the disclosure analysis, the index is to be developed following the given steps.

3.5.1 Development of Intellectual Disclosure Index

The development of the Intellectual Disclosure Index has been conducted in the given steps.

First a draft list of Intellectual Capital disclosure under three categories of Internal capital, External capital and Human capital has been considered based on prior literature (Bontis 2003, Abeysekera, I., 2006). Since the identified items have been selected from research conducted with reference to other countries, it is important to validate it and check it for its appropriateness in the Indian

context. The paper based on Indian companies' Intellectual capital disclosure (Harsh Purohit et al., Vandana Mehrotra and Rashmi Pant (2017), Mahesh Joshi et al (2011), Madan Lal Bhasin (2011)) on the above three categories have been selected and compiled in the disclosure attributes. The disclosure attributes developed by Vandana Mehrotra (2019), developed disclosure attributes with reference to Indian companies after taking the opinion of experts, has been considered. The disclosure attributes of Vandana Mehrotra (2019) comprises of 20 items, compared with the disclosure attributes already developed by Bontis (2002) and Abeysekera and Guthrie (2005), it has been analysed to add certain items to the attributes for the study, considered relevant in terms of Indian companies like Processes, Quality, Partnership, Share Price, Loyalty, Shareholders, Know-How and Human Capital. The following table depicts the final list of 30 items representing Intellectual Disclosure Practices considering 10 items under each subcategory.

Table 3.9

Table showing Intellectual Capital Disclosure Index

INTERNAL CAPITAL	EXTERNAL CAPITAL	HUMAN CAPITAL
Structural Capital	Brands	Education
Intellectual Property	Distribution Channels	Work Related Knowledge
Information Systems	Business Collaborations	Know how
Management Philosophy	Partnerships	Training
Research and Development	Licensing Agreements	Employee Expertise
Financial relations	Customers Satisfaction	Employee Numbers
Innovations	Customers	Knowledge sharing
Processes	Market Share	Safety
Patent	Share Price	Human Capital
Copyright	Loyalty	Human Assets

(Source: Compiled by Researcher)

3.5.2 Evaluation Method for Intellectual Capital Disclosure Practices

Evaluating the disclosure practices, 30 items in the index are considered. The annual reports have been searched electronically to find out the presence or absence of the said terms of Disclosure Index. The items have been written in the search column to find out the disclosure of items in the annual reports.

The score for disclosure of each company has been considered based on the following process:

- One point: If a company discloses that specific item in each fiscal year in an annual report, one point will be assigned. Likewise, if a company discloses one item for every five years,

5 points will be assigned and accordingly there will be maximum 150 points that can be assigned to each company.

- Zero point: If a company does not disclose that item in their financial report then 0 point will be assigned.

3.5.3 Calculation of Intellectual Capital disclosure score

For calculating the Intellectual Capital disclosure score total of 30 items have been considered for five years of all 50 companies under study. The following table depicts the total maximum score that can be assigned based on the different elements:

Table 3.10

Table showing items in each element with maximum allotted score.

Elements of Intellectual Capital	Items	Years	Maximum points
Internal Capital	10	5	50
External Capital	10	5	50
Human Capital	10	5	50
Total Maximum points can be assigned to each company			150

Based on the disclosure practices, the scores for each company has been collected to measure the level of disclosure followed by each company. Results have been tabulated based on the number of companies disclosing these terms. Company-wise analysis and testing of the degree of variance have also been done.

3.6 Data Collection

The data for each company for five years has been collected and the presented in Annexure 1. The compiled report is presented in the below table:

Table 3.7 presents disclosure scores of various companies over a 5-year period from 2016-17 to 2020-21. The table contains the names of the companies along with their respective disclosure scores for the specified period.

Table 3.11**Table showing company wise disclosure score of 5 years out of 150 points**

Company Wise Analysis		Company Wise Analysis	
Name Of the Company	Score Of 5 Years	Name Of the Company	Score Of 5 Years
Bajaj Finserv	46	Cipla	73
Hindalco	68	UPL	72
Tata Motors	76	SBI	75
L&T	77	Maruti Ltd	77
Coal India	41	TCS	75
ONGC	58	Hero Motor	80
Housing Development	55	Sun Pharma	74
Axis Bank	67	Asian Paints	72
Reliance	86	Ultra Tech Cement	67
Indusland Bank	52	BPCL	72
HDFC Bank	70	Bharati Airtel	72
Grasim	64	Hindustan Unilever	66
SBI Life insurance	63	Britannia	52
Gail	63	Nestle	62
ICICI	61	ITC	89
Kotak	55	JSW Steel	70
Infosys	73	Dr. Reddy	73
Bajaj Finance	48	HDFC Life	67
NTPC	54	Bajaj auto	55
Divis lab	44	PGCIL	50
Adani Ports	49	HCL	80
IOC	60	ACC LTD	61
Tata steel	75	Mahindra and Mahindra	79
Wipro	81	Eicher Motors	48
Titan	73	Tech Mahindra	64

(Source: Compiled by Researcher)

Coal India, with a score of 41, exhibits the lowest disclosure score among the listed companies, while ITC demonstrates the highest score of 89, indicating a higher level of transparency and information disclosure. The data revealed variations in disclosure practices across different companies. For instance, pharmaceutical companies like Cipla (73) and Dr. Reddy (73) displayed commendable disclosure practices, as did technology companies such as TCS (75) and Infosys (73). Conversely, companies like Coal India (41) and Divis lab (44) showed lower levels of disclosure.

Notably, some companies, like Hero Motor (80) and HCL (80), attained high disclosure scores, signifying a commitment to transparency in both the Automotive and IT sectors. Conversely, sectors like power generation and distribution, represented by companies like PGCIL (50) and NTPC (54), demonstrated comparatively lower disclosure scores.

Overall, this analysis of company-wise disclosure scores over the 5-year period highlights significant disparities in disclosure practices among the listed companies, with potential implications for investor decision-making and corporate governance assessments.

The following table gives information on the top five companies achieving maximum disclosure scores.

Table 3.12

Table showing names of the companies that achieved maximum point in disclosure of Intellectual Capital

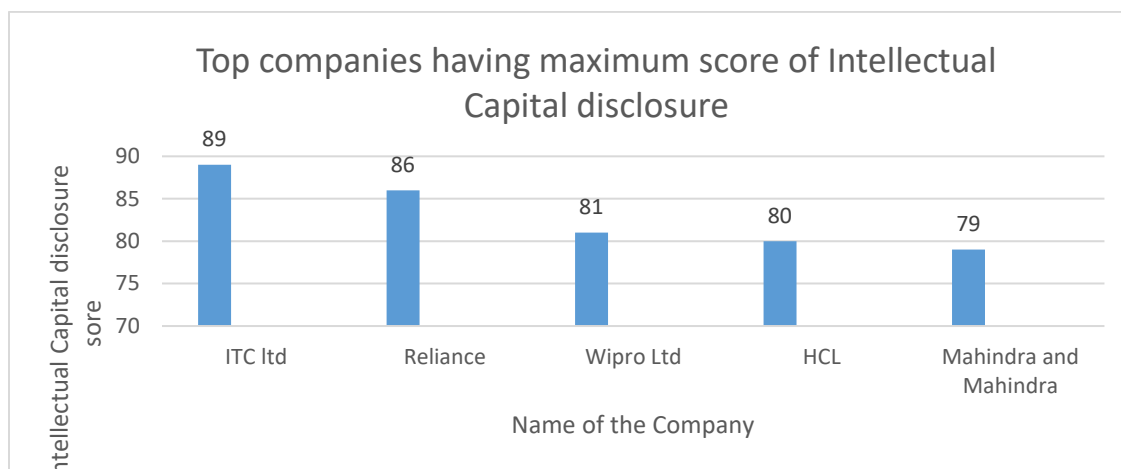
Name of the company	ITC Ltd	Reliance	Wipro	HCL	Mahindra and Mahindra
Score	89	86	81	80	79

(Source: Compiled by Researcher)

The same score is presented in the graph below:

Graph 3.1

Graph showing top companies having maximum score of Intellectual Capital disclosure



3.6.1. Data Analysis

The above table shows the disclosure of each item in the annual reports by all 50 companies separately for the last 5 years from 2016-17 to 2020-21. It can be analysed from the table that based on the disclosure score of each company, the maximum score has been of ITC with 89 points which is 59% of total score. While minimum score has been of Coal India with 41 points which is only 27% of total score. This shows that overall, the score of all the companies falls between 59% to 27%. It can be thus ascertained that the poor disclosure practices followed by sample companies for Intellectual capital. Table 3.13 provides a comprehensive overview of the variation in item-wise total disclosure among the surveyed companies over a five-year period.

Table 3.13

Table showing variation in total score achieved by companies

Number of total points scored for five years	Number of Companies
26-50	07
51-75	34
76-100	09
Mean	66.08163
Standard Deviation	11.30604

Coefficient of Variance	17.1092%
-------------------------	----------

In this context, it is noteworthy that most of the companies, specifically 34 out of the total surveyed entities, scored 51 to 75 points. This range appears to be the most common and indicative of a moderate level of disclosure practices among these firms. In contrast, seven companies scored in the lower range of 26 to 50 points, signifying a lower degree of transparency in their reporting and disclosure practices.

Conversely, nine companies have achieved total scores in the higher bracket of 76 to 100 points, indicating a more comprehensive and robust disclosure environment. This suggests these companies have prioritized transparency and information disclosure more than their counterparts. The later part discusses the disclosure practices of different components separately.

Internal Capital: The capital remains in the organisation, when employees go home at night is called as internal capital and termed as structural capital for the organisation(Roos et al., (1998) as cited by Abbas, 2015), added by Bontis et al., 2000 and Wu and Tsai, 2005, it includes all the non-human storehouses of knowledge including database, organisational chart, strategies routines, process manuals and policies(Bontis et al., 2000 and Wu and Tsai, 2005 as cited by Abbas, 2015). Strong structural capital leads to full utilization of intellectual capital (Ramezan 2011, as cited by Abbas 2015). Hence, this capital should be disclosed in different forms like, processes, Information system, Intellectual Property, Research and Development etc. the score has been achieved by the researcher for all these items of internal capital including structural capital.

Table 3.13 illuminates the diversity in item-wise total disclosure scores among the companies, with the majority falling to a moderate range.

3.6.3. Data Analysis of Item wise Disclosure

Table 3.14 gives an overview of the distribution of internal capital across various categories within an organization's context.

Table 3.14

Table showing disclosure score of Internal Capital

Internal Capital	Total
Structural Capital	0
Intellectual Property	117

Information Systems	85
Management Philosophy	15
Research and Development	197
Financial relations	0
Innovations	177
Processes	248
Patent	146
Copyright	27

(Source: Compiled by Researcher)

Structural capital is considered as one of the elements of Intellectual Capital, this item is not disclosed in any of the annual reports of any companies in any of the years considered for study. It goes in connection with the earlier part of the study where it has been analysed that this specific term has not been used by the company to disclose in their annual reports. Secondly, financial relations, none of the companies have disclosed in their annual reports. While Research and development items have been disclosed by many companies. It highlights the significant emphasis has been placed on intellectual property, research and development, processes, and innovations, underscoring the organization's strategic priorities in these domains.

Table 3.15 Presents a Comprehensive Analysis of the Distribution of Internal capital disclosure scores achieved by a set of entities over a Five-Year Period.

Table 3.15

Table showing comprehensive analysis of the distribution of Internal Capital Disclosure scores

Number of total points scored for five years	Number of Disclosure
0	02
1-90	03
91-180	03
181-250	02
Mean	101.2

Standard Deviation	29.11476864
Coefficient of Variance (SD/Mean)	28.7695%

Analysis of each item: Internal Capital, Structural Capital and Financial relations have not been disclosed by any companies. None of the items of Internal capital has scored maximum points. The maximum score that has been achieved is Research and Development with 197 points. Maximum companies have given importance to Research and Development. Management Philosophy has been given the least importance for disclosing with only 27 points. The standard deviation of 29.11476864 has quantified the dispersion or variability of the data points around the mean. The coefficient of variation has been expressed as a percentage (28.7695%) providing a measure of the relative variability of the data compared to the mean.

Table 3.16 presents a comprehensive analysis of the disclosure practices followed by companies, with a focus on individual items related to internal capital. The table categorizes these practices into three distinct groups: “All the Five years,” “Less than Five years,” and “No disclosure.”

Table 3.16

Table showing analysis of Individual items of internal capital:

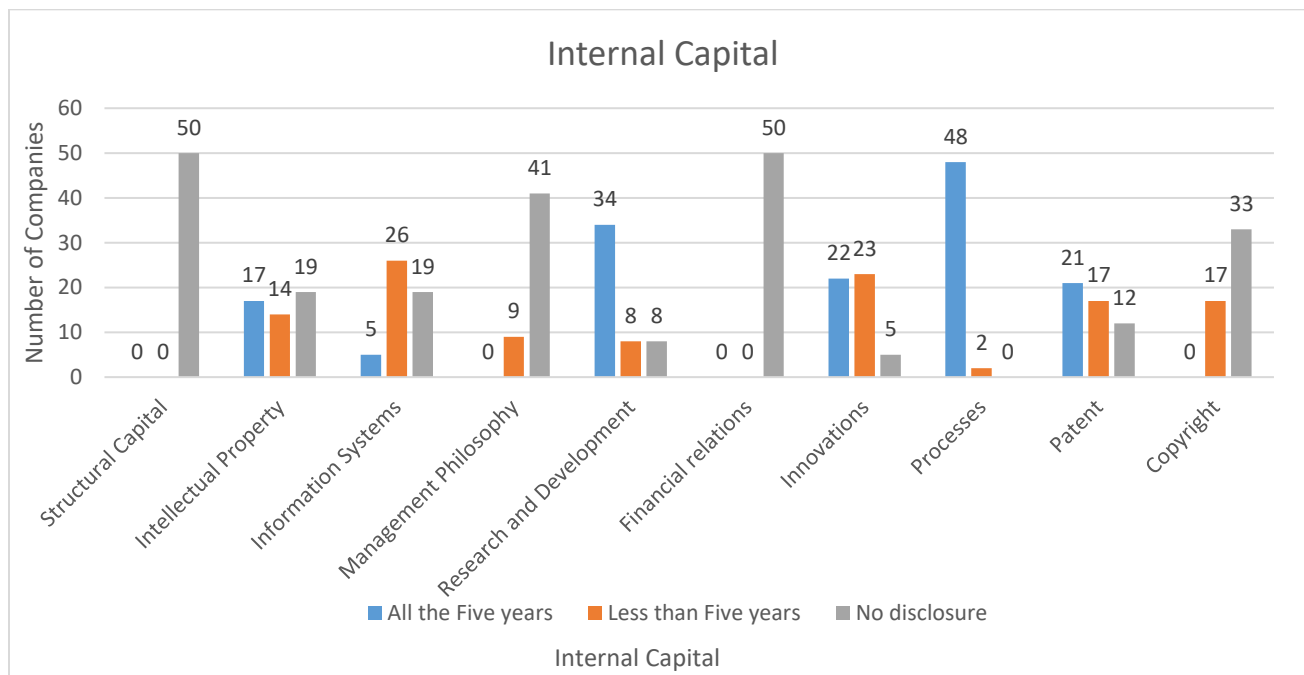
	Disclosure practices followed by Companies			
		All the Five years	Less than Five years	No disclosure
Internal Capital	Structural Capital	---	---	50
	Intellectual Property	17	14	19
	Information Systems	5	26	19
	Management Philosophy	---	9	41
	Research and Development	34	8	8
	Financial relations	---	---	50
	Innovations	22	23	5
	Processes	48	02	---

	Patent	21	17	12
	Copyright	---	17	33
Average disclosure practices followed		24.5	14.5	26.33333

(Source: Compiled by Researcher)

Graph 3.2

Graph Showing Disclosure Scores of Individual Items of Internal Capital



The individual item analysis under Internal Capital has shown that Processes are disclosed by 48 companies for all five years while for two companies it has been disclosed for less than 5 years. Management Philosophy, has not been disclosed by 41 companies for all five years, 9 companies tried to disclose it but for less than five years of study. The same goes for Copyright, where 17 companies have been disclosed it for less than 5 years and 33 companies have not disclosed it for any of the years of study. Patents and innovations have been given similar results, as after innovations, companies can go for filling the patent. A sizeable number of companies have gone for innovations with the help of the Research and Development department and have reported the patent of the companies for all five years, showing poor disclosure of Internal capital items among Nifty 50 companies.

EXTERNAL CAPITAL – Capital created externally by developing relations with the customers, termed as Customer Capital or Relational Capital. It is knowledge embedded in the marketing channels and customers relations with organisation to achieve competitive advantage (Bontis et al., 2000 as cited by Abbas 2015). Customers are the main source of revenue generation in the organisation, it is important for an organisation to satisfy their customers’ demands. External capital has been comprised of resources and assets derived from external sources or stakeholders contributing to the organization’s value and competitive advantage.

The table presents a breakdown of the total external capital across distinct components or categories.

Table 3.17

Table showing disclosure scores of External Capital

External Capital	Total
Brands	171
Distribution Channels	37
Business Collaborations	5
Partnerships	221
Licensing Agreements	11
Customers Satisfaction	1
Customers	250
Market Share	219
Share Price	227
Loyalty	136

(Source: Compiled by Researcher)

The table highlights diverse external intellectual capital components and their respective totals. Brands have been given a notable presence with 171 instances, indicating their substantial influence. Distribution channels have been given few at 37. Business collaborations and licensing agreements have shown limited representation, with 5 and 11 instances, respectively. Partnerships and customers have emerged as significant contributors, recording 221 and 250 instances, respectively. Customer satisfaction has been given minimal representation at 1. Market share, share price, and loyalty have been presented moderately with 219, 227, and 136 instances,

respectively, suggesting that partnerships, customers, market share, and share price are key drivers of external intellectual capital.

Table 3.18 provides a comprehensive analysis of the distribution of disclosure scores achieved by a set of entities over a five-year period. The table categorizes the number of entities based on the total points they scored, offering insights into the variation in disclosure practices among the sampled entities.

Table 3.18

Table showing variation in Item wise total disclosure of External Capital companies

Number of total points scored for five years	Number of Disclosure
0	00
1-90	04
91-180	02
181-250	04
Mean	127.8
Standard Deviation	36.26331173
Coefficient of Variance	28.3750%

External Capital referred to as Relational Capital or Customer Capital pertaining to the resources that facilitate interactions with external entities. This aligns with the scope of Intellectual Capital, focusing on these external assets, and involves their analysis through disclosure practices. Among companies, all components have been disclosed, indicating awareness and consistent disclosure practices. Notably, customer-related aspects have received significant emphasis due to their pivotal role. Although customer details have been disclosed consistently, their satisfaction level is often omitted. Only one company, India Oil Corporation (IOC), disclosed customer satisfaction in 2020-21, underscoring its growing recognition. Similarly, Loyalty, a crucial external capital information, has gained considerable attention, evidenced by widespread disclosure practices in annual reports, showing better disclosure practices among Nifty 50 companies.

Table 3.19 offers a comprehensive analysis of the disclosure practices followed by companies in relation to various categories of external capital over a specified period. The table presents these

practices in three distinct groups: “All the Five years,” “Less than Five years,” and “No disclosure.”

Table 3.19

Table showing analysis of Individual items of External capital.

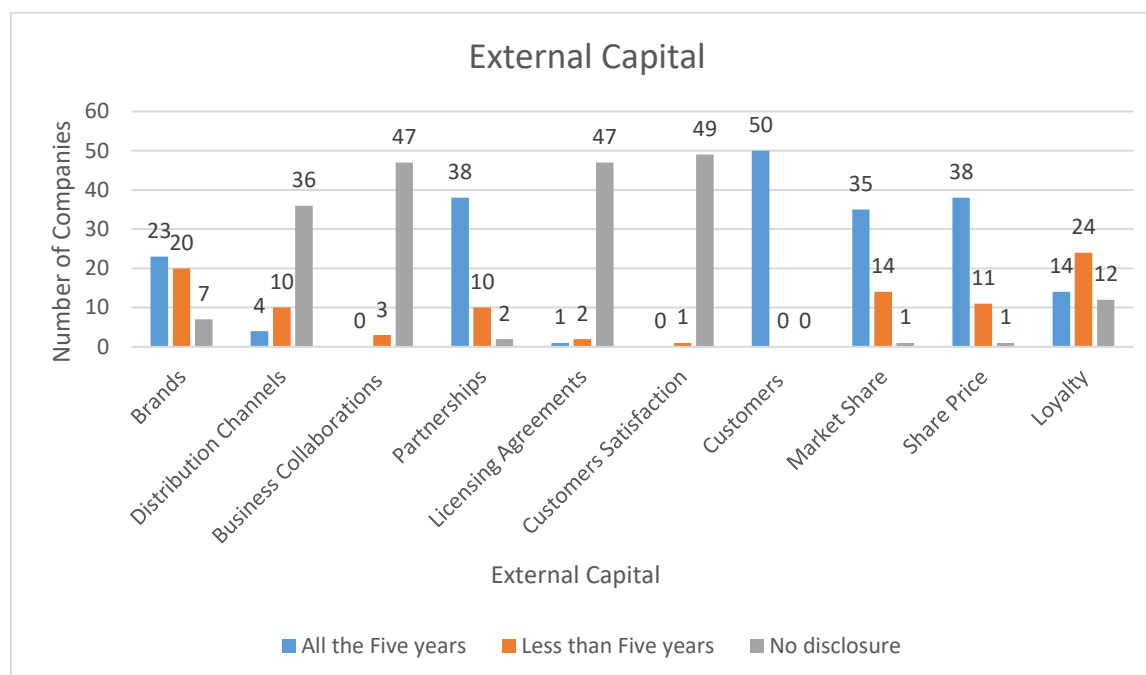
Disclosure practices followed by Companies			
External Capital	All the Five years	Less than Five years	No disclosure
Brands	23	20	7
Distribution Channels	04	10	36
Business Collaborations	---	03	47
Partnerships	38	10	2
Licensing Agreements	01	02	47
Customers Satisfaction	---	01	49
Customers	50	---	---
Market Share	35	14	01
Share Price	38	11	01
Loyalty	14	24	12
Average Disclosure Practices	25.375	10.55556	22.44444

(Source: Compiled by Researcher)

The above table shows that customers have been disclosed by all the companies for all five years, while customer satisfaction has not been disclosed by 49 companies in these five years, only one company has disclosed it for less than 5 years. Share price and partnership have been given equal importance by the company to disclose in the annual reports. While business collaboration has not been disclosed by any companies for all five years, showing better disclosure practices for external capital by Nifty 50 companies.

Graph 3.3

Graph showing individual items disclosure scores of External Capital.



HUMAN CAPITAL

Human Capital within an organization has been categorized into various components representing different facets of the workforce and knowledge base. They are the living and thinking part of Intellectual Capital reflecting as the heart of Intellectual Capital (Abbas, 2015). Human capital has signified the collective knowledge, skills, and abilities of an organization's employees contributing to its productivity, competitiveness, and overall value. Table 3.20 presents an analytical overview of the allocation of human capital.

Table 3.20

Table showing disclosure scores of Human Capital

Human Capital	Total
Education	249
Work Related Knowledge	20
Know how	34
Training	248
Employee Expertise	0

Employee Numbers	10
Knowledge sharing	62
Safety	229
Human Capital	136
Human Assets	6

(Source: Compiled by Researcher)

The presented data delineates various dimensions of human capital within an organizational context. Education and Training have exhibited prominent occurrences, suggesting a focus on skill enhancement. Knowledge sharing has been represented moderately, hinting at efforts to disseminate expertise. Notably, Employee Expertise has recorded no instances indicating a potential gap in recognizing and quantifying this aspect. Safety and Work-Related Knowledge has been represented substantially underscoring its significance. Employee Numbers and Human Assets have been exhibited with limited instances, reflecting limited attention. Human Capital and Know-how have contributed to the comprehensive human capital landscape, with varied prevalence, showing poor human capital disclosures among companies.

Table 3.21 provides a comprehensive analysis of the distribution of disclosure scores achieved by a set of entities over a five-year period. The table categorizes the number of entities based on the total points they scored, offering insights into the variation in disclosure practices among the sampled entities.

Table 3.21

Table showing comprehensive analysis of the distribution of disclosure practices for human capital

Number of total points scored for five years	Number of Disclosure
0	1
1-90	5
91-180	1

181-250	3
Mean	99.4
Standard Deviation	32.55498672
Coefficient of Variance	32.7514%

The basic resource for organizations is human capital, constituting the fundamental root of intellectual capital. It has been comprised of a distinct classification within the key framework of intellectual capital. The analysis has encompassed ten disclosure elements pertaining to human capital. Notably, despite the intrinsic significance of employee expertise within human capital, it remains universally unaddressed in corporate disclosures. Education and Training has shown significant importance in disclosure practices, except for Divis Laboratory and Sun Pharma, the former has not disclosed either of the two items once in five years and the latter has omitted training disclosure for a single year. Other entities have disclosed these elements consistently over the five-year study period. The significance of safety as a disclosure item has been underscored.

Table 3.22 offers a comprehensive analysis of the disclosure practices followed by companies in the context of human capital, categorizing them into distinct aspects of their workforce and knowledge base. The table provides insights into the level of transparency and information disclosure among the surveyed companies, presenting data in three distinct groups: “All the Five years,” “Less than Five years,” and “No disclosure.”

Table 3.22

Table showing Human Capital Disclosure practices followed by Companies

		Disclosure practices followed by Companies		
		All the Five years	Less than Five years	No disclosure
Human Capital	Education	49	01	---
	Work Related Knowledge	04	---	46
	Know how	02	11	37
	Training	48	02	---
	Employee Expertise	---	---	50

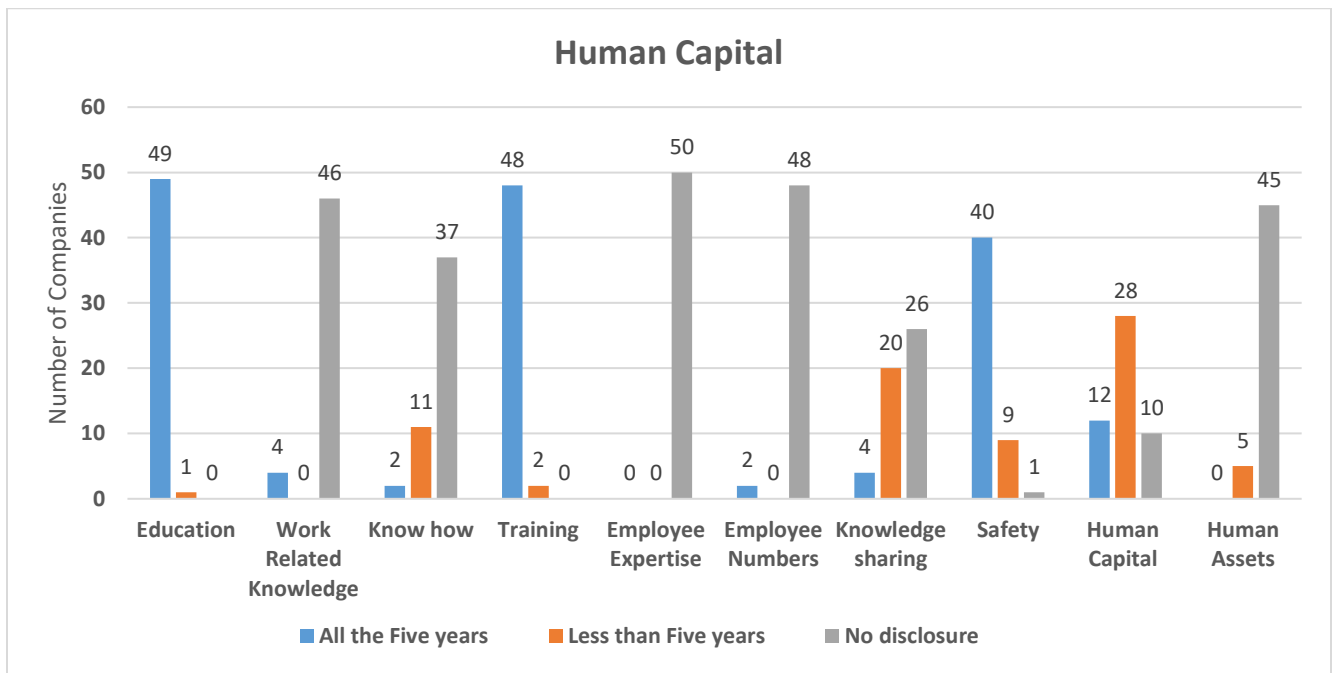
	Employee Numbers	02	---	48
	Knowledge sharing	04	20	26
	Safety	40	09	01
	Human Capital	12	28	10
	Human Assets	---	05	45
Average disclosure practices followed		20.125	10.85714	32.875

(Source: Compiled by Researcher)

The item ‘education’ has been disclosed by 49 companies out of 50, followed by Trainings and then Safety. While Employee Expertise, an important element for human capital, has not been disclosed in the annual reports by any of the companies. Only Two companies have disclosed employee numbers in the annual report, rest of the companies have not disclosed. Overall average disclosure practices followed by the company for human capital are at 20, showing poor disclosure practices compared to external capital and internal capital.

Graph 3.4:

Graph showing Individual items disclosure scores of Human Capital.



3.7 Conclusion:

Annual report is the proper channel to give information about the firm to its stakeholders across the globe. The transition from physical and financial capital to intellectual capital has compelled the firm to disclose intellectual capital in their annual reports. Researcher has probed the extent of intellectual capital disclosure in the annual reports.

Nifty 50 companies have been selected as sample for study, and it has been found that total score achieved has been maximum in External capital compared to Internal and human capital. Human Capital has been given the least importance for disclosure in annual reports, answering to the second question raised ‘do corporate houses disclose distinct items in their annual reports?’, still none of the sample companies have disclosed all the items of intellectual capital disclosure index, in their annual reports for all five years, showing the unawareness about the concept and the items of intellectual capital among corporate houses. None of the corporate houses have assigned numbers to intellectual capital in their annual reports, gearing the latter part to find out the opinion of the experts about the awareness of this term as intangible assets and the variables, in measuring the value of Intellectual Capital. This lacking not only of the awareness and clarity in terms of concept and components of intellectual capital but also, the clarity in their disclosure is the poignant revelation of this analysis.

3.8. Quantitative Analysis (Survey Study)

3.8.1 Introduction

This part of the study adopts quantitative technique to gather information regarding the variables to be considered to develop new methods for measurement of Intellectual Capital by collecting and analyzing opinions from the experts, representing groups as listed above through a survey method.

To obtain opinions from professionals from the field of accounts and commerce on practices, awareness, and practicability of valuation of intellectual capital through administration of structured instruments. The study has tried to fill the gap between idea and practicability of measuring the value of Intellectual capital and relating it with the performance variable of the company.

A structured instrument has been developed to study the opinions of experts on the variables for measuring intellectual capital. The questionnaire has been canvassed among 340 target

respondents, of which 170 responded. The survey has analysed opinions about all the variables used for measuring intellectual capital.

Multi-item measures have been used to provide stronger concept validity, as single item measures may not address all the multidimensional theories' sides. More questions under the same construct would enable analysis of the construct from different angles (Foster & Swenson, 1997). This study has used the Likert Scale with equal intervals between response categories like opinionnaire in literature comprising close ended questions.

The Questionnaire contained 12 questions with sub-questions making a total of 59 questions. All questions are classified under three parts. Part-I elicits the personal profile (demographic details) of the respondents. Part II has been based on the awareness of the methods of measuring Intellectual Capital and Part III has been based on practicability of objective and effectiveness of methods for measuring intellectual capital.

The pilot study has presented a set of questionnaires comprising individual questions to collect the primary data on awareness of different methods of measuring intellectual capital. Study has been done by administering a pre-test questionnaire to groups of practitioners like selected chartered accountants, academicians, researchers, professionals, managers, and research scholars, who are directly or indirectly dealing with this concept. The group taking part in the study has been informed about the objective of the questionnaire and has been asked to evaluate the questionnaire, keeping in view the research objectives and giving suggestions for the research, if required. The questionnaire has been then edited accordingly. The outcome of the pre-test emerged as a reframed questionnaire, presented to a group of three experts who had examined and suggested changes. A pilot study of the questionnaire has been conducted to evaluate all important variables to be considered for measuring intellectual capital.

The last draft of the questionnaire has been finalized as per the suggestions given by the advisors; the questionnaire has been finalized to be introduced to the respondents in the exploration.

3.8.2 Structure of the Questionnaire

Structurally, the questionnaire in this study is divided into six sections with 27 sub questions. All these questions have been classified into two parts. Part, one elicits the personal profile. Questionnaire along with the review of literature which has been considered useful and relevant in the drafting of the Questionnaire too has been outlined as below:

For conceptual awareness, the second part of questionnaire has been collected, where first three questions has been related to the awareness of intangible assets meanings, consideration of human assets in total assets and the features of human assets likes knowledge, expertise, and experience to be as assets in the company. The answers to these three questions have been collected based on only yes or no. The questionnaire has been prepared to achieve the following objectives of the study:

1. Ascertain the views of practising accountants, company directors, stockbrokers, investors, auditors, members of the professional bodies, academicians, Researchers, and managers regarding the method of Intellectual capital and opinion relating to the different variables to be considered in measurement method of Intellectual capital.

To achieve this objective researcher has gathered opinion regarding awareness of the term and its components, amongst respondents so that their views relating to the methods can be considered further for analysis. For awareness of the components 5-point Likert scale, 1- Strongly Unaware, 2- Unaware, 3- Indifferent, 4- Aware, 5- Strongly Aware is applied. Most of the statements incorporated in these questions have been derived from Gioacasi, (2014), Edvinson and Malone (1997), Petty & Cuganesan (2005), Bontis (1998), Brooking (1996), Stewart & Ruckdeschel (1998).

The next part is regarding the awareness of different methods of measuring intellectual capital amongst the respondents. Question 1 and 2 under this section are about basic awareness relating to different methods which has been collected by yes or no and second, if they are aware about certain methods then are they be aware about the actual calculation method has been probed. This question has tried achieving the first part of the seventh objective about the views of respondents relating to the various methods which have already been developed and used by academicians. The methods that have been calculated are considered for collecting response and only Skandia Navigator method is considered with the of the rest quantitative methods

owing to the only reason that it was an initiative taken by Skandia to develop the method for measuring Intellectual capital.

The second part of the seventh objective tried to collect the opinion relating to the importance given to different variables of Intellectual capital for measuring the value of Intellectual capital. The broader variables already have been given by the researchers and sub questions also have been considered in the various studies conducted by (Chahal & Bakshi (2016)), Marilyn Miller(1999)(Oecd.org website), Maditinos et al(2010), Maditinos, Sevic, & Tsairidis (2010), Ana Paula Santos (“1998 - questionnaire - BontisMDIC1998survey,” n.d.) and Bontis, Chua Chong Keow, & Richardson (2000), Bontis (1998). Further, in the same part the remaining two questions have been collected relating to their opinion for developing and disclosing the method in financial statements by yes or no.

The last part of the questionnaire is regarding the opinion of respondents towards variables considered for developing a new method of measuring Intellectual Capital. This part of the questionnaire contributed in achieving third objective -to develop a new framework for measuring Intellectual Capital. Here, the whole part is divided into six subparts of employee competence, Managers’ attitude which can be considered as a part of human capital, administrative expense, Research and Development expense and Structural capital are considered as sub part of Structural Capital and Advertisement and sales promotion and Customer’s relations to be considered as the part of Relational Capital. The variables of this sub parts are derived from (Chahal & Bakshi (2016)), (Herrera-Madrid & Botero-Botero, 2012), (Miller, 1999) (<https://www.oecd.org/industry/ind/1947855.pdf>), (Maditinos, Sevic, & Tsairidis, 2010), Ana Paula Santos (“1998 - questionnaire - BontisMDIC1998survey,”n.d.) and Bontis (1998). Some of the variables have been changed after the pilot study by consulting the experts. Here, the last part has been divided into 7 subparts which have been named on the basis of the variables in that group considering the study done by (Chahal & Bakshi (2016)), (Herrera-Madrid & Botero-Botero, 2012), (Miller, 1999) (<https://www.oecd.org/industry/ind/1947855.pdf>), (Maditinos, Sevic, & Tsairidis, 2010), Ana Paula Santos (“1998 - questionnaire - BontisMDIC1998survey,” n.d.) and Bontis (1998) . The first sub-part relates to employee competence, the sub-part of human capital. Depending on the opinion given, this employee competence variable can be considered

in the method for measuring Intellectual capital. Here the statement under each variable is scaled from 1 to 5, Extremely Important = 5, Important = 4, Moderately Important = 3, Slightly Important = 2 and Not at all Important = 1. This human capital has been subdivided into manager's attitude and employee competence. Depending on the opinion, if employee competence has been given more importance, then wages and salaries will be considered in valuation method and, if manager's attitude has been given importance, then the remunerations given to directors and key management personnel remuneration will be considered in the valuation method.

Later, the third, fourth, fifth sub sections present the information gathered pertaining to the structural capital considering administrative expenses, research and development expense, also, process and organizational structure as variables have been collected. Here the statement under each variable has been scaled from 1 to 5, Extremely Important = 5, Important = 4, Moderately Important = 3, Slightly Important = 2 and Not at all Important = 1. If this has been given importance, then the expenses relating to the structural capital like research and development expenses, revenue and capital both will be considered in the valuation method.

And the last two sub parts relating to the relational capital of the organization considering variables like advertisement and marketing and customer's relation have been collected. Here the statement under each variable has been scaled from 1 to 5, Extremely Important = 5, Important = 4, Moderately Important = 3, Slightly Important = 2 and Not at all Important = 1. If this has been given importance, then advertising and marketing expenses will be considered in the valuation method. The entire section IV delineates the roadmap to achieve the third and the seventh objectives:

- to develop a framework for measuring Intellectual capital and its productivity.
- to ascertain the views of practising accountants, company directors, stockbrokers, investors, auditors, members of the professional bodies, academicians, Researchers, and managers regarding the method of Intellectual capital and opinion relating to the different variables to be considered in measurement method of Intellectual capital.

The opinion of the respondents has been collected to develop new framework for measuring Intellectual Capital, gauging the relationship between intellectual capital and financial performance of the companies to achieve the sixth objective of study.

- to gauge the relationship of Intellectual capital with the financial performance as well as return on investment of selected companies.

The non-probability sampling approach has been used, based on purposive sampling method for drawing sample units. Views of professionals -CA, CMA, CS etc., and representatives from various financial companies, broker houses, financial analysts and academicians have been included in the research. Questionnaires have been circulated wherever possible with a personal approach to reach the respondents. In some cases, questionnaires have been sent to respondents by social media (email or on WhatsApp). In response, 170 filled questionnaires have been received from the respondents considered for further analysis. The answers given by the respondents for each question and sub-questions have been quantified in categories and have been computed in table form to illustrate the responses.

3.8.3 Data Analysis Techniques

The data collected from the respondents have been analysed using the following tools:

- Cronbach Alpha
- Validity of the questionnaire
- Descriptive Statistics
- Factory Analysis
- Chi-square

3.8.3.1 Reliability of the Structured Questionnaire

Reliability gauges consistent outcomes across repeated measurements. The Internal Consistency Reliability method, assessing the reliability of a summated scale, sums items for a total score. Cronbach's alpha coefficient, a widely used technique, measures internal consistency and positive correlations among questionnaire items. The coefficient ranges from 0 to 1; values closer to 1 indicate higher consistency. A value above 0.7 is considered good, while below it is poor. The overview of Cronbach's alpha coefficients has been tabulated below. (Smith, J.A., Ed. (2003); Sekaran, U. (2003); Nunnally, (1981)).

Reliability Statistics

Table 3.22 presents a summary of indicators and their respective Cronbach's reliability alpha coefficients, serving as measures of internal consistency or reliability for each group of indicators. These indicators have been related to various aspects of intellectual capital, organizational competence, and financial metrics.

Table 3.23:

Table showing Indicators and Reliability Alpha Score

Sr. No.	Grouped Indicators Items	No. of items	Cronbach Reliability Alpha Coefficient
01	Awareness about different terms under Intellectual Capital	10	0.948337989
02	Employee Competence	4	0.767459
03	Manager's Aptitude	5	0.898182917
04	Structural Capital	4	0.691504009
05	Administrative expenses	6	0.811222131
06	Research and Development expense	5	0.826333182
07	Advertising and Sales Promotion	5	0.851669892
08	Customer's Satisfaction	5	0.687222091
09	Employee's relations	5	0.926451173
10	Overall	49	0.971589

The reliability test Cronbach alpha coefficient has been run determining how strongly the attributes/opinion have been related to each other and to the composite score. All dimensions of the questionnaire related to measuring opinion have been tested and the Cronbach's alpha has been found ranged from 0.68722 to 0.97158 showing internal reliability of the scale. The reliability of scale as measured by coefficient alpha reflects the degree of cohesiveness among the scaled items (Malhotra, 2007) and Nunnally (1981). Testing the scale for reliability has revealed that for all the above statements Cronbach alpha coefficient is 0.9715. Therefore, this scale has been considered reliable and has been capable enough for further data processing.

3.8.3.2 Validity of the Structured Questionnaire

In this empirical investigation, the structured questionnaire has been given to respondents and results of measurement of the criterion wise validity and overall means score has been given in the tabular form. Total number of 14 questions inclusive of Demographic variables (06 criteria),

General variables of respondents' awareness about intangible assets, opinion about human resources and their variables under assets and different items under intellectual capital (criteria grouped under Q 1 to Q4) , their awareness about the different methods and opinion relating to the disclosure of Intellectual capital in financial statements(criteria grouped under Q1 to Q5) while the last part has collected the respondents opinion regarding the variables to be considered in the valuation of Intellectual capital having 8 sub parts (criteria grouped under Q 1 to Q39).

Table 3.24 presents a summary of mean scores and rankings reflecting respondents' opinions regarding their awareness of intellectual capital and the perceived importance of various variables for the valuation of intellectual capital.

Table 3.24

Table shows Mean scores of Extents of Respondents opinion on Awareness of Intellectual capital and importance on the variables to be considered for valuation of Intellectual capital.

Respondents' opinion with respect to awareness and variables to be considered under Intellectual capital	Mean score (Rank)	Rank
Awareness about different terms under Intellectual Capital	4.095238	6
Employee Competence	4.346726	1
Manager's Aptitude	4.266667	2
Structural Capital	4.104167	5
Administrative expenses	3.969246	9
Research and Development expense	4.092857	7
Advertising and Sales Promotion	4.202381	4
Customer's Satisfaction	4.00119	8

Table 3.24 provides valuable insights into the respondents' perceptions of the awareness and importance of various variables related to intellectual capital. It highlights that, according to the respondents, employee competence, manager's aptitude, advertising, and sales promotion are among the most crucial factors in intellectual capital valuation. These findings can inform researchers and financial analysts in assessing and enhancing intellectual capital within organizations.

Table 3.25 presents a comparative analysis of mean scores attributed to different variables of intellectual capital. This table offers insights into how respondents perceive and rank the significance of these specific dimensions of intellectual capital.

Table 3.25**Table showing comparing of the mean score**

Variables of Intellectual Capital	Mean score
Human Capital	4.306696
Structural Capital	4.055423
Relational Capital	4.139286

Table 3.25 reveals that, on average, respondent's rate 'human capital' as the most pertinent component of intellectual capital, followed by relational capital and structural capital. These findings offer valuable insights into the relative significance of these dimensions of intellectual capital from the perspective of the surveyed respondents. Such insights can inform organizations' strategies for managing and enhancing their intellectual capital resources effectively.

Table 3.26 provides a comparative analysis of mean scores and differences in mean scores for various variables based on respondents' opinions. This table allows for the assessment of how respondents rate these variables on a rating scale of 1 to 5 and identifies the disparities in their perceptions.

Table 3.26**Table showing Comparison of Mean scores of Variables**

Respondents’ opinions with respect to various criteria about variables		Respondents’ opinions with respect to various criteria about variables		Difference in Mean count (column 2 – column 4)
Rating scale 1 to 5				
1	Mean score (Rank) (2)	3	Mean Score (Rank) (2)	
Human Capital	4.306696 (1)	Structural capital	4.055423	0.251273
Structural Capital	4.055423 (3)	Relational Capital	4.139286	-0.083863
Relational capital	4.139286 (2)	Human Capital	4.306696	-0.16741
	4.167135			0.111606667

Convergent validity has been measured by comparing mean scores of scales with other measures of the same construct. It becomes clear from the table that the means of the different variables have been measured, less variation has been observed in different variables of the given categories and average score has been found similar. Majority of the Respondents have been placed between Extremely Important-5 to Not at all important-1. The table provides an overall difference in mean scores ($4.1671 - 4.0554 = 0.1116$) between all variables assessed. This value suggests, on average, there has been a slight preference among respondents for Human Capital, followed by Relational Capital and Structural Capital, in terms of their perceived importance in the context of intellectual capital demonstrating average respondents has placed the highest importance on Human Capital, followed by Relational Capital and Structural Capital.

3.8.3.3 Respondents' Profile

The researcher's aim has been to gather perspectives on intellectual capital valuation from diverse respondents with varying backgrounds and experiences. This section outlines their demography and profiles including place of residence, education, qualifications, professions, and work experience.

1. Place of residence

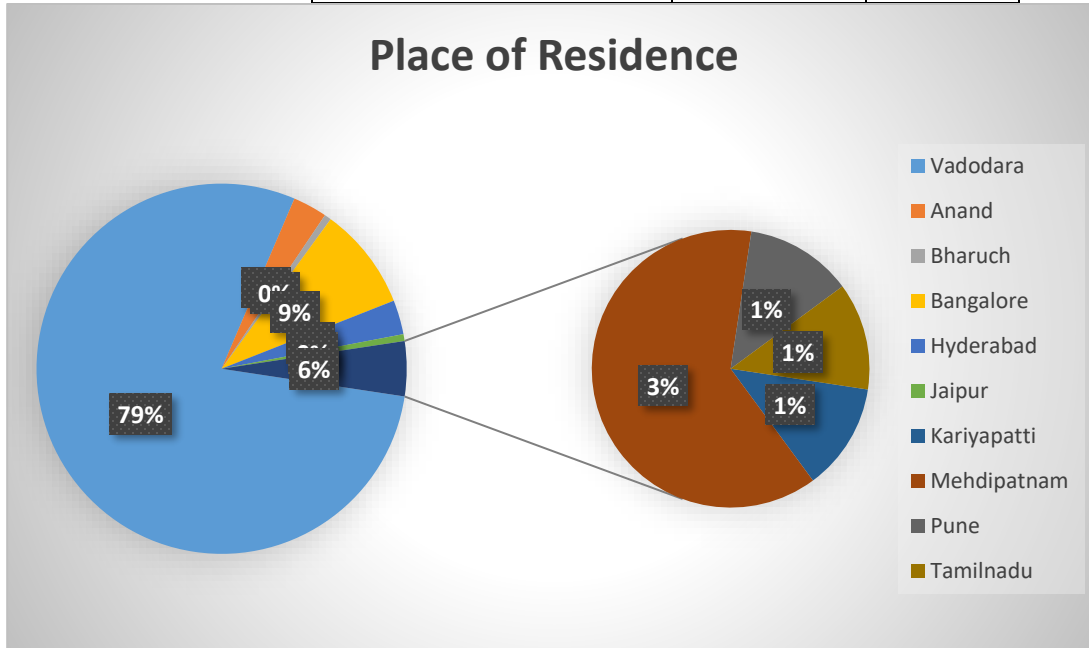
Respondents have been categorized based on the place of residence. [Table 3.27] shows the diversification of the place from where they belong. The following table provides an insight into the respondent's place of residence.

Table 3.27

Table showing Place of residence of the Respondents.

Place of residence	Frequency	Percent
Vadodara	132	77.65%
Anand	5	2.94%
Bharuch	1	0.58%
Bangalore	15	8.82%
Hyderabad	5	2.94%
Jaipur	2	1.18%

Kariyapatti	1	0.58%
Mehdipatnam	5	2.94%
Pune	1	0.58%
Tamilnadu	2	1.18%
Total	170	100%



Pie Chart 3.5: Place of Residence of Respondents

The tabulated data illustrates the diverse residential origins of the respondents, indicating a heterogeneous sample composition. Demographic diversity has represented the survey's comprehensiveness and has been contributing unbiased perspectives reflecting their respective backgrounds. The analysis of the above table has revealed the following observations:

The most frequent place of residence, has been accounted for 132 individuals, constituting 77.65% of the total sample. A relatively low frequency, with only 5 individuals residing in Anand and Mehdiapatnam, has been about 2.94% of the total while lowest frequency has been at Bharuch, with only 1 individual, accounting for 0.58% of the total. Bangalore has registered a moderate frequency, with 15 individuals residing there, comprising approximately 8.82% of the total, Hyderabad has shared a similar frequency to Bangalore, with 5 individuals, representing 2.94% of the total while Jaipur and Tamilnadu has a frequency of 2 individual,

contributing 1.18% of the total sample and Kariyapatti and Pune each has been a frequency of 1 individual, contributing 0.58% to the total sample.

Most individuals in the sample reside in Vadodara, followed by Bangalore, while other locations exhibit lower frequencies.

2. Educational Qualification of Respondents

Respondents have been categorized based on educational qualifications, including those with graduate degrees [Table 3.28] ensuring comprehensive insights.

Table 3.28 provides an overview of the educational qualifications of the respondents, detailing the frequency and percentage distribution of various educational categories. This table sheds light on the academic backgrounds of the surveyed individuals.

Table 3.28:

Table showing Educational Qualification of the Respondents

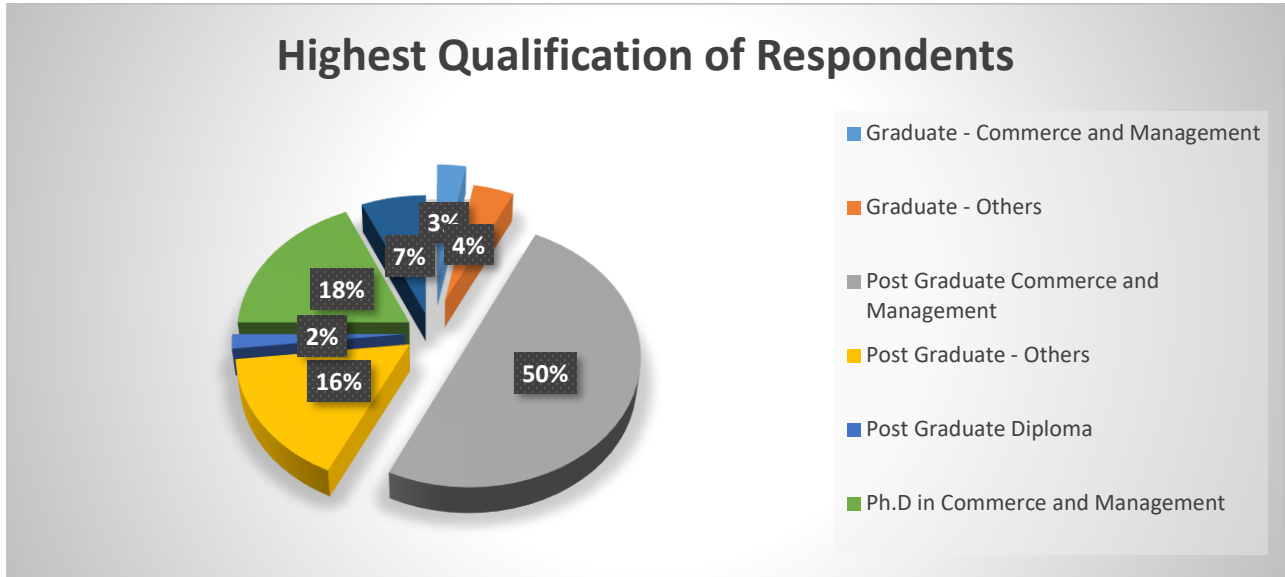
Graduate		
	Frequency	Percent
Graduate - Commerce and Management	5	2.94%
Graduate – Others	7	4.11%
Post Graduate Commerce and Management	86	50.59%
Postgraduate – Others	27	15.88%
Post Graduate Diploma	3	1.76%
Ph.D. in Commerce and Management	31	18.25%
Ph.D. in Other discipline	11	6.47%
	170	100

The tabulated data has revealed a predominant proportion of 50.59% of the total respondents possessing postgraduate qualifications in Commerce and Management, while a notable subset has been comprised of 18.25% attaining Ph.D. credentials within the same disciplinary domain. This distribution is graphically depicted in Pie Chart 4.1. Given the substantial representation of individuals with backgrounds in commerce and management, particularly at the postgraduate

level, their input has been poised to augment the depth and scope of the survey, thereby facilitating subsequent investigative endeavors.

Pie Chart 3.6-

Pie chart showing Highest Qualification of Respondents



The blend of respondents' qualifications has explained a majority of individuals with a background in commerce, suggesting their potential utility in discussions pertaining to the awareness and methodologies associated with Intellectual Capital.

3. Professional Qualifications of the Respondents

Table 3.29 provides an analysis of the professional qualifications held by the respondents, presenting data on the frequency and percentage distribution of various professional degrees. This table offers insights into the professional backgrounds of the surveyed individuals.

Table 3.29

Table showing Professional Qualifications of the Respondents

Professional Degrees	Frequency	Percent
CA	35	19.02 %
CWA	16	8.70 %
CS	9	5.29 %
CFA	11	5.98 %
LLB	06	3.26%

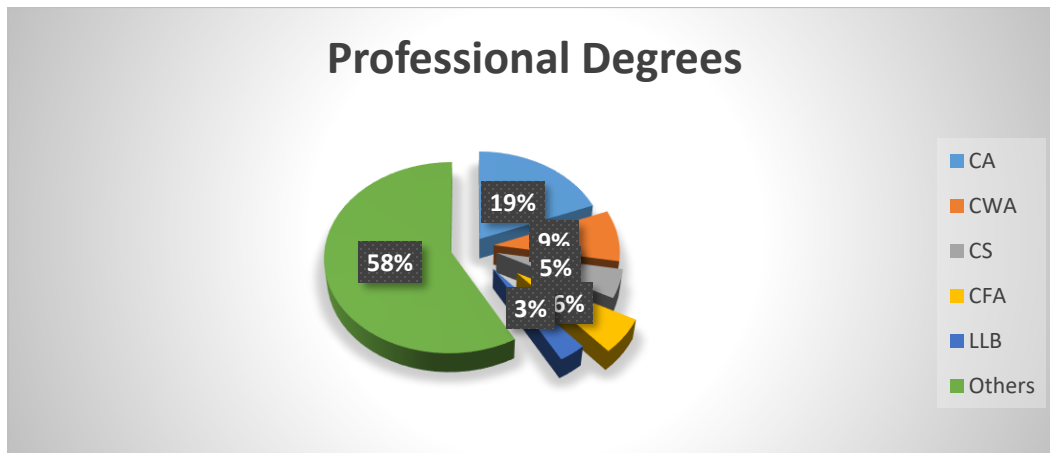
Others	107	57.75 %
Total	184	100

Among the 170 respondents surveyed, it has been observed that 14 individuals possessed dual professional qualifications, such as CA paired with CWA or CS coupled with CFA, resulting in a total of 184 responses. Excluding “others” category, the predominant professional qualification among respondents have been comprised of Chartered Accountancy (CA), with 19.02% of the total, followed by Cost and Works Accountancy (CWA) with 8.70% , Certified Financial Analyst (CFA) with 5.98%, and Company Secretary (CS) with 5.29%. Notably, several respondents have been with dual professional designations, such as CA and CWA, CWA and LLB, and CS and CFA. The prevalence of Chartered Accountant professionals within the respondent cohort underscores their potential to provide valuable insights, thereby enhancing the depth of our survey for subsequent analysis.

The same has been presented in the Pie Chart 3.7

Pie Chart 3.7

Pie Chart showing Professional Degrees



4. Occupation wise distribution of Respondents

Table 3.30 Examines the distribution of respondents based on their respective occupations, presenting data in terms of frequency and percentage distribution across various occupational

categories. This table offers insights into the occupational backgrounds of the surveyed individuals.

Table 3.30

Table showing Occupation wise distribution of Respondents

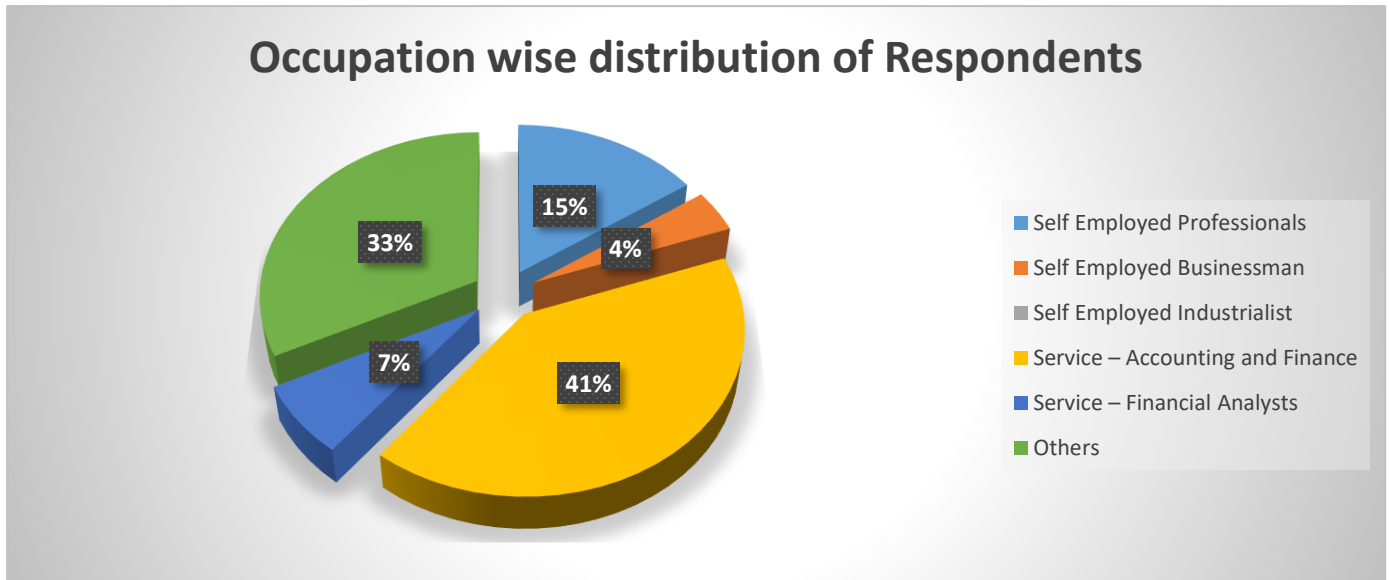
Occupation	Frequency	Percent
Self Employed Professionals	26	15.29%
Self Employed Businessman	9	5.29%
Self Employed Industrialist	-	-
Service – Accounting and Finance	69	40.59%
Service – Financial Analysts	12	7.06%
Others	54	31.77%
	170	100

The tabulated data has indicated 48.22% of the respondents affiliated with the service sector, with a notable concentration in the domains of accounting and finance, while the remaining portion pertains to financial analysts reflecting the relevance of respondents and importance, as they are professionals working in the related fields enriching the responses and outcome of the survey. 71 professionals have been with the degree of CA, CWA, CS and CFA, 26 have been self-employed and the remaining have been employed in service. This diversification has contributed to collecting opinions relating to intellectual capital. Additionally, among the self-employed category, 15.29% have been self-employed professionals, with a subset belonging to unspecified occupational categories not been described in the questionnaire. Consequently, the predominant representation of respondents from the accounting and finance sector underscores the significance of their perspectives in augmenting the depth and breadth of our survey, enriching its analytical scope.

The same is shown in Graph 3.8

Pie Chart 3.8

Table showing Occupation wise distribution of Respondents



5. Professional Profile of the Respondents

Table 3.31 presents an analysis of the professional profiles of the respondents, providing data on the frequency and percentage distribution across various professional roles. This table offers insights into the diversity of professional profiles among the surveyed individuals and this diversity of professionals has contributed to get unbiased opinions about the survey.

Table 3.31

Table showing Professional Profile of the Respondents

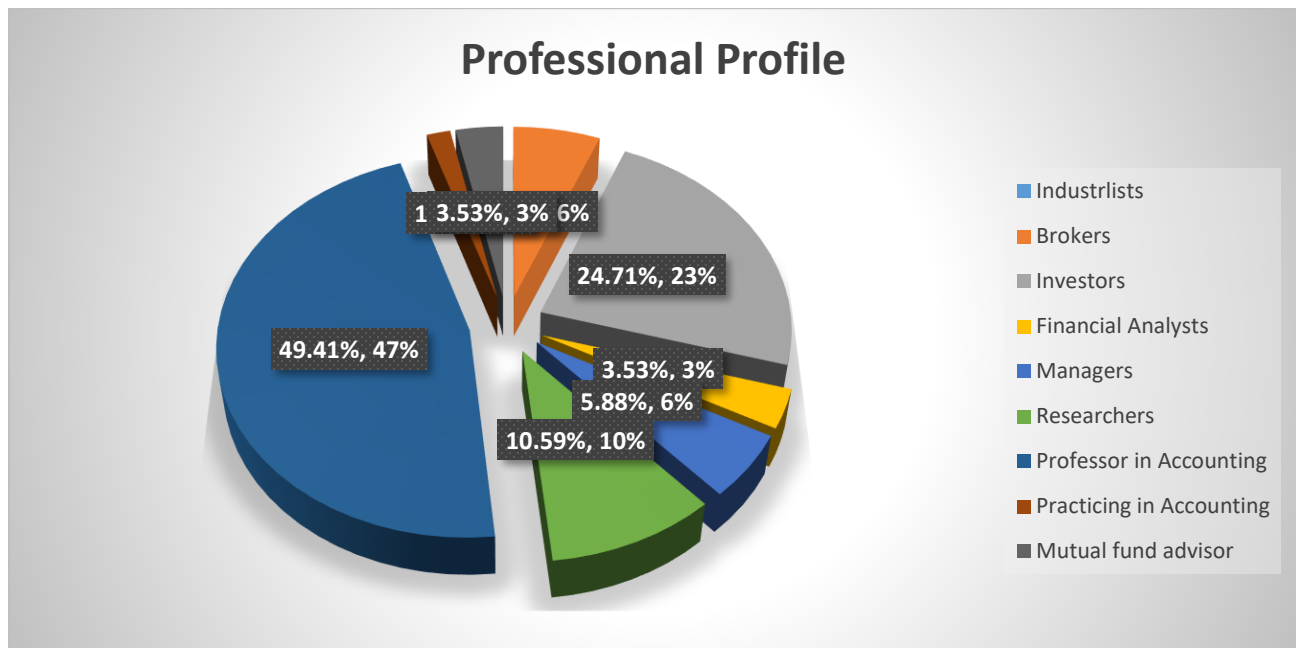
Professional Profile	Frequency	Percent
Industrialist		
Brokers	4	2.35%
Investors	39	22.94%
Financial Analysts	9	5.29%
Managers	10	5.88%
Researchers	21	12.35%
Professor in Accounting	74	43.55%
Practicing in Accounting	7	4.11%

Mutual fund advisor	6	3.53%
Chairman		
CEO		
Total	170	100

Professional designation of accounting professors has been comprised as 43.55% of the total. Additionally, 22.94% of respondents identified themselves as investors, with a smaller contingent of 2.35% being brokers and 5.29% as financial analysts. Moreover, a subset of 4.11% indicated active engagement in accounting practice. Maximum has been recorded from accounting field contributing to developing method for measuring intellectual capital. This distribution has suggested the potential value inherent in their insights pertaining to valuation variables, offering valuable inputs for the development of novel methodological frameworks. The same is shown in Pie chart 3.9

Pie Chart 3.9

Pie Chart showing Professional Profile of Respondents



6. Experience of the Respondents

Table 3.32 presents an examination of the respondents' years of professional experience, providing data on the frequency and percentage distribution within distinct experience ranges.

This table offers insights into the distribution of professional experience among the surveyed individuals.

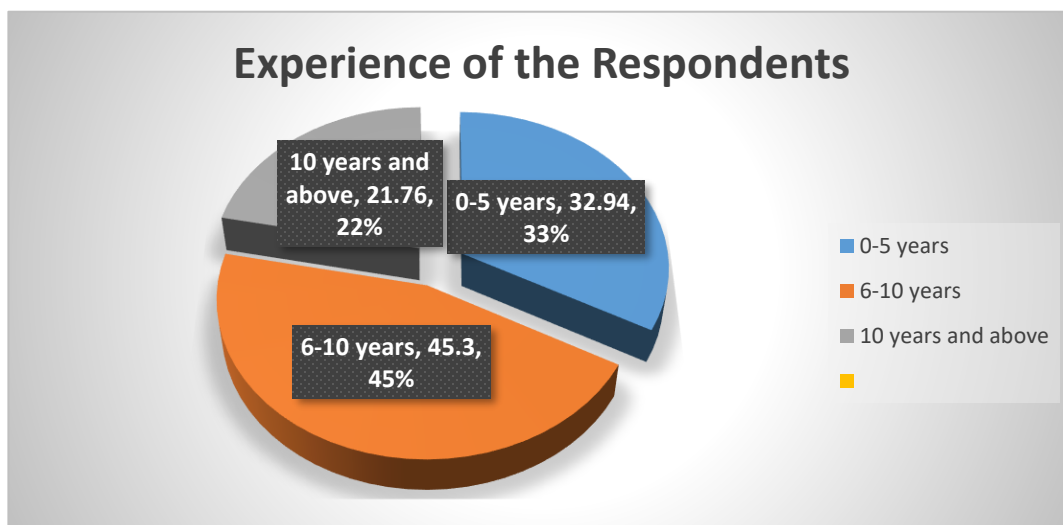
Table 3.32
Table showing Experience of the Respondents

Experience	Frequency	Percent
0-5 years	55	32.94
6-10 years	77	45.3
10 years and above	38	21.76
Total	170	100

A notable portion of respondents, constituting 32.94%, possess professional experience spanning less than five years, a majority, comprising 45.3% or 77 individuals have accrued with experience below the decade mark and 21.76% of respondents, totaling 38 individuals, boast experience exceeding ten years. This diversity in professional tenure among respondents holds potential significance in elucidating insights into the levels of awareness and has been perceived necessity surrounding the disclosure of Intellectual Capital within financial statements.

The work experience of respondents is also shown in the Pie Chart No. 3.10

Pie Chart 3.10
Pie Chart showing Experience of the Respondents



❖ **Overview of Demographic profile:**

- ✓ Maximum respondents have been from Vadodara, while others from various places like Tamil Nadu, Bangalore, Hyderabad, Jaipur, Pune etc. benefiting the researcher of diversified places.
- ✓ Maximum respondents have been postgraduates from commerce and management, while 31 respondents have secured Ph.D. in the field of commerce and management supporting the researcher to get proper opinion against the questions.
- ✓ From total professional degree holders, the maximum have been Chartered Accountants, followed by Cost and Work Accountants, contributing towards expertise knowledge to researcher for getting proper results.
- ✓ The experience in the field of accounts and financial analyst of respondents has been assisted to get proper results. Among the respondents, the majority have experience in the accounts field and some have experience as financial analysts.
- ✓ Some respondents have been investors, making contribution to the results.

3.8.3.4 Descriptive Analysis

Descriptive statistics has been a general means to explore the data collected and summarized in the form of graph and tables. This has been usually the initial procedure undertaken to observe and obtain a general idea about the data. Other examples include frequency distributions. The following section presents the descriptive statistics for each variable in this study.

Table 3.33 examines the conceptual clarity of respondents on various aspects related to intangible assets and their recognition as assets within an organizational context. The table presents data on the frequency and percentage distribution of respondents' affirmative and negative responses.

Table – 3.33

Table Showing Conceptual Clarity of Respondents

	Yes	Percent	No	Percent	Total	Total Percent
Are you aware of Intangible assets?	170	100%	00	0.00%	170	100

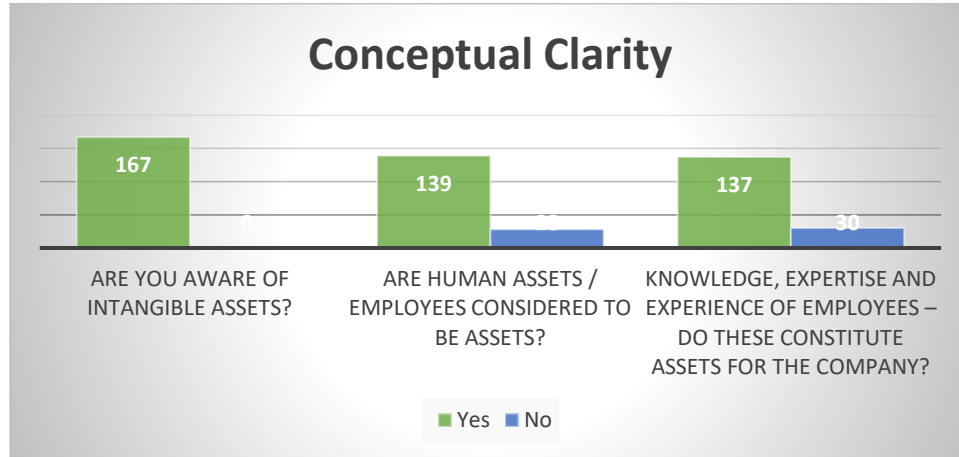
Are human assets / employees considered to be assets?	139	81.76%	31	18.23%	170	100
Knowledge, expertise, and experience of employees – do these constitute assets for the company?	137	80.59%	30	19.41%	170	100

The preceding inquiries have been designed to gauge respondents' awareness pertaining to intangible assets and their perspectives regarding the inclusion of human resources as assets within organizational frameworks. Notably, the findings indicated comprehensive awareness among all respondents, totaling 100%, regarding the concept of intangible assets. Subsequently, when queried specifically about the acceptance of human resources as organizational assets, 81.76% of respondents affirmed this designation. However, a perspective has emerged, wherein 80.59% of respondents have endorsed the specific attributes of human assets, namely knowledge, expertise, and experience, indeed, to be regarded as assets for the company. Thirty-one (31) respondents are aware of intangible assets term, but they don't consider human / employees as an asset to the organisation. Two (2) out of 31 have not considered the human qualities of knowledge expertise and experience to be a part of intangible assets ignoring qualities of employees as an asset which adds competitive advantage to an organisation. This response has suggested a prevalent inclination of respondents towards acknowledging and selecting components of intellectual capital as an asset.

This acceptance is presented in the following graph:

Graph 3.11

Graph showing Conceptual Clarity of Respondents



Different terms under Intellectual Capital

Respondents have been asked to identify the variables considered for identification and valuation of intellectual capital. Their responses have been evaluated on a 5-Likert scale ranging from Strongly Agree – 5 to Strongly Disagree – 1.

Table 3.34

Table showing Responses of Respondents for terms to be considered under Intellectual Capital.

Give your opinion relating to the different terms of intangible assets to be considered under intellectual capital:								
Particulars	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)	Total Respondents	Mean	SD
Intellectual Property	93 (54.7%)	43 (25.29%)	17 (10%)	05 (2.94)	12 (7.05%)	170	4.235294	1.329208
Patent	97 (57.05%)	32 (18.82%)	26 (15.29%)	01 (0.58%)	14 (8.23%)	170	4.170588	1.350111
Trademark	91 (53.52%)	47 (27.64%)	08 (4.70%)	13 (7.65%)	11 (6.47%)	170	4.158824	1.284205
Human Resource	106 (62.35%)	22 (12.94%)	19 (11.17%)	05 (2.94%)	18 (10.59%)	170	4.241176	1.316962
Copyright	94 (55.29%)	41 (24.11%)	19 (11.18%)	02 (1.18%)	14 (8.24%)	170	4.135294	1.34975
Network	61 (35.88%)	49 (28.82%)	20 (11.76%)	19 (11.17%)	21 (12.35%)	170	3.841176	1.293387
Organisational Structure	60 (35.29%)	43 (25.29%)	30 (17.64%)	11 (6.47%)	26 (15.29)	170	3.788235	1.368229
Skill	81 (47.65%)	48 (28.24%)	12 (7.06%)	17	12 (7.06%)	170	4.094118	1.306547
Talent	79 (46.47%)	41 (24.12%)	23 (13.53%)	14 (8.24%)	13 (7.65%)	170	4.064706	1.324079

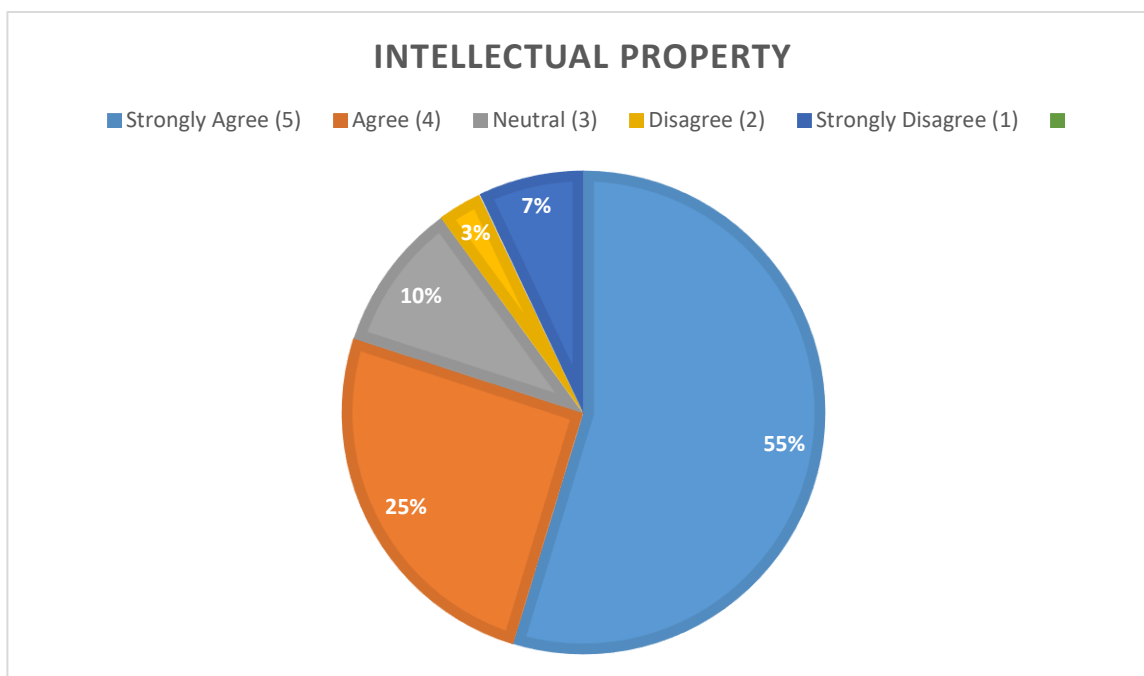
Experience	75 (44.12%)	54 (31.76%)	15 (8.82%)	15 (8.82%)	11 (6.47%)	170	4.041176	1.274956
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Intellectual Property:

Ninety Three (93) respondents out of 170 contributing 54.7% of total respondents have believed strongly in disclosing intellectual property as intellectual capital, 43 respondents representing 25.29%, agreed to disclose intellectual property as intellectual capital, implying that 79.99 % i.e. about 80% of respondents have encouraged disclosing intellectual property as intellectual capital in the annual report. 17 respondents representing 10%, have no view on this matter, just 5 respondents representing 2.94%, have not agreed to reveal intellectual property as intellectual capital, and only 12 respondents, or 7.05%, strongly disagree to consider intellectual property as intellectual capital. Their responses have been verified scientifically with the help of the average score of their responses, which is 4.23. It has been worth noting that this term has already been revealed in the financial statement under the heading non-current assets. The same responses have been presented in the pie chart below.

Pie Chart. 3.12

Pie Chart showing Intellectual Property as an Intangible Assets



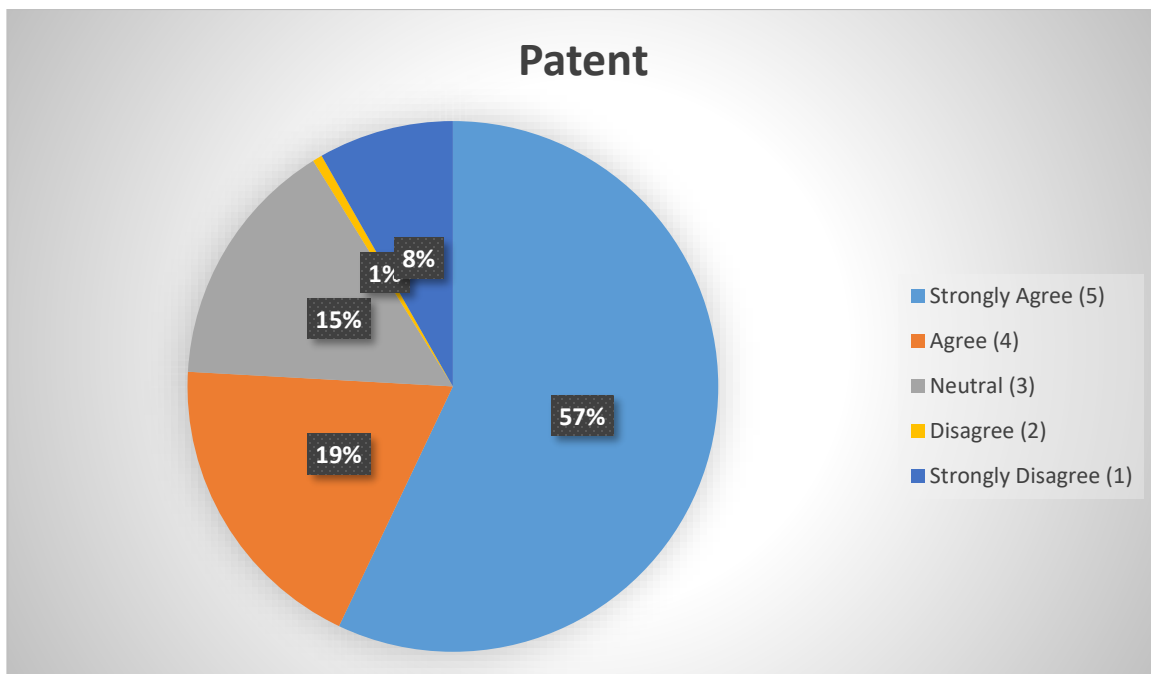
Patent:

Of 170 respondents, 97 (57.05%) firmly believe in considering patents as intellectual capital. Additionally, 32 respondents (18.82%) supported this disclosure. Approximately 75.87% of respondents have favored disclosing patents as intellectual capital in the annual report. In contrast, 26 respondents (15.29%) remained neutral on the issue, suggesting that they have no strong opinion either way. Only one respondent (0.58%) disagreed with patents to be considered under intellectual capital, whereas 14 respondents (8.23%) strongly disagreed. The mean score of 4.170588 suggests that respondents have been inclined to agree representing the standard deviation of 1.350111, implying substantial diversity in the replies i.e. varied opinions among the respondents.

This analysis suggests that there has been a strong inclination towards the disclosure of patents as intellectual capital among the respondents, aligning with the broader trend of recognizing intellectual property in financial statements under non-current assets. The same is represented through pie chart below.

Pie Chart 3.13

Pie Chart showing Patent as an Intangible Assets



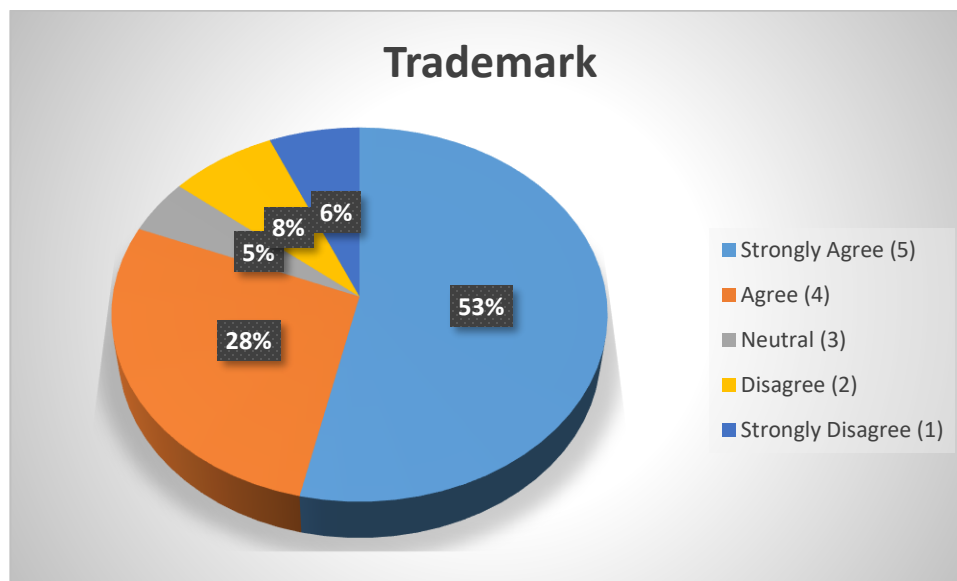
Trademark:

Out of 170 respondents, 91 (53.52%) strongly believed in disclosing trademarks as intellectual capital, adding 47 respondents (27.64%), supported this disclosure. In all, approximately 81.16% of respondents supported considering trademarks as intellectual capital in the annual report. Contrasting 8 respondents (4.70%) remained neutral on the same, indicating no strong view either way. Only 13 respondents (7.65%) disagreed with the consideration of trademarks as intellectual capital, while 11 respondents (6.47%) severely disagreed. This investigation has shown respondents' high preference for considering trademarks as intellectual capital. The majority have favored it, with a mean score of 4.14 suggesting a general tendency towards agreement. The standard deviation 1.205 has shown a moderate variability in the responses, indicating some diversity of opinion but a clear overall trend towards agreement.

The same has been shown with the help of the pie chart.

Pie Chart – 3.14

Pie Chart showing Trademark as an Intangible Assets



Human Resources:

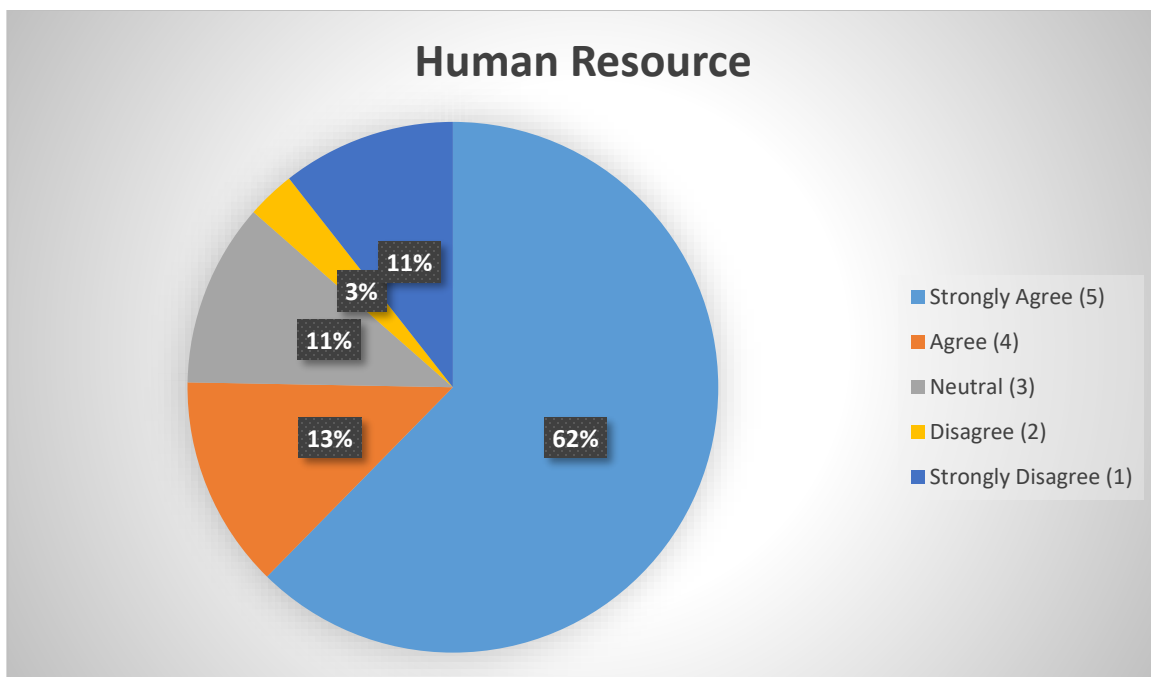
Out of 170 respondents, 91 (53.52%) strongly supported considering trademarks as intellectual capital, adding 47 respondents (27.64%) to the same. Overall, 81.16% of respondents have supported considering trademarks as intellectual capital in the annual reports. In contrast, 8 respondents (4.70%) have been neutral on the issue, suggesting no strong opinion

either way. Only 13 respondents (7.65%) opposed the consideration of trademarks as intellectual capital, with 11 respondents (6.47%) strongly disagreeing with the same.

The mean score of 4.241176 suggested inclination of respondents towards agreement of trademark as an intellectual capital. The standard deviation of 1.316962 has implied substantial diversity in the replies, showing majority agrees or strongly agrees. According to the findings of this investigation, respondents have strongly preferred trademark as an intellectual capital. This means trademarks have been confirmed by most of the respondents for intellectual capital. The same is presented in the pie chart below.

Pie Chart 3.15

Pie Chart showing Human resources as an intangible assets.



Copyright:

From 170 respondents, a significant majority of 94 respondents (55.29%), have shown a strong belief in considering copyrights as intellectual capital. Additionally, 41 respondents (24.12%) agreed the same. Combined, this accounted for approximately 79.41% of respondents in favor of considering copyrights as intellectual capital in the annual reports.

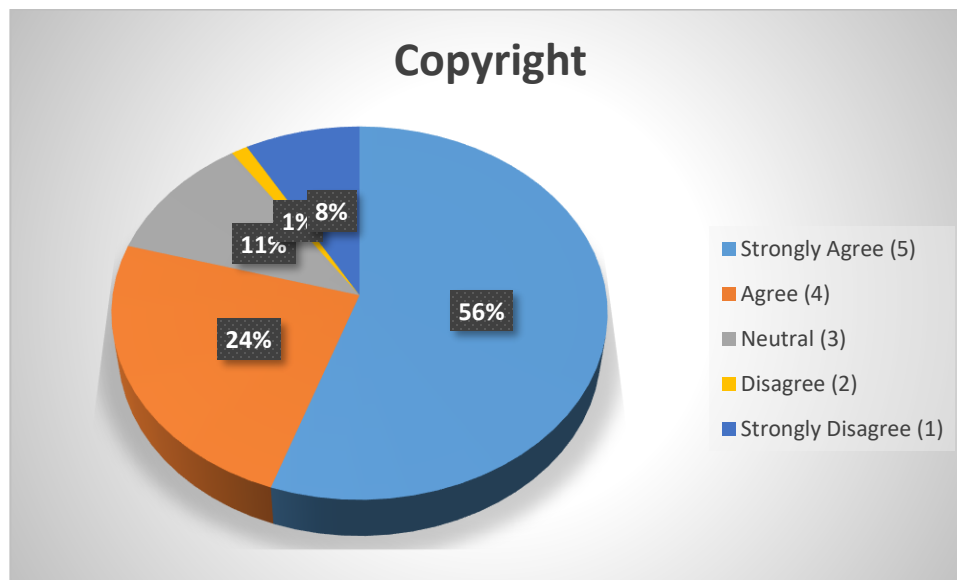
Conversely, 19 respondents (11.18%) have remained neutral on the issue, indicating they have no strong opinion either way. Only 2 respondents (1.18%) disagreed, considering copyrights as intellectual capital, while 14 respondents (8.24%) strongly disagreed with this notion.

The mean score of 4.170588 has been indicated a general tendency towards agreement among the respondents. The standard deviation of 1.1934 has suggested a moderate variability in the responses, indicating majority agree or strongly agree.

This analysis has suggested that there has been strong inclination towards considering copyrights as intellectual capital among the respondents, aligning with the broader trend of recognizing intellectual capital in financial statements under non-current assets.

Pie Chart – 3.16

Pie Chart showing Copyright as an intangible assets



Network:

Based on the collected data, responses with relation to the consideration of networks as intellectual capital is presented:

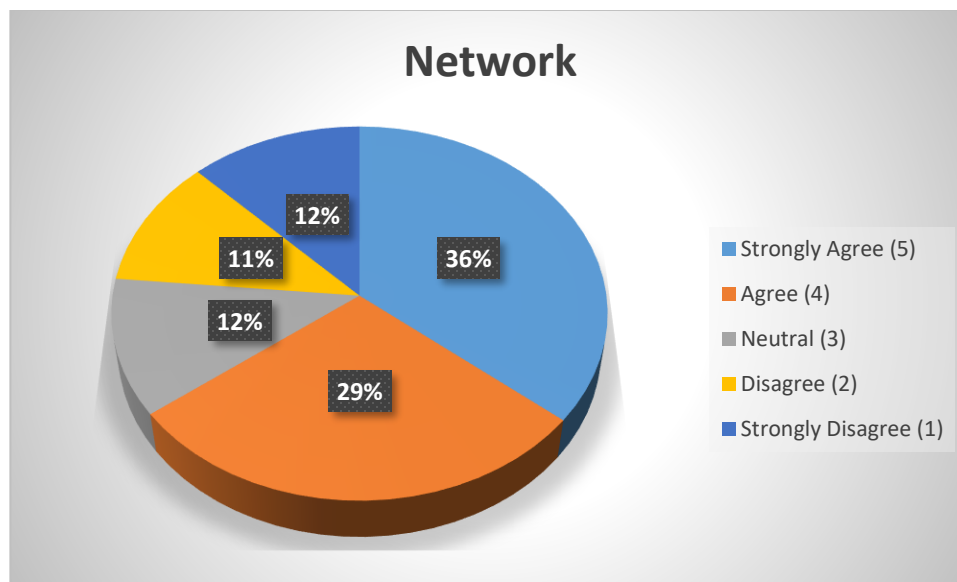
Of the 170 responders, 61 (35.88%) have strongly supported the disclosure of networks as intellectual capital. Additionally, 49 respondents (28.82%) supported the same. Taken as a whole, this has represented roughly 64.70% of respondents have supported revealing networks as intellectual capital in the annual report. In contrast, 20 responders (11.76%) expressed no view at all, indicating their neutral opinion about the matter. Additionally, networks disclosed as intellectual capital have been disagreed by 19 respondents (11.18%) and strongly disagreed by 21 respondents (12.35%). The mean score of 3.647059 indicated the respondents' overall receptivity to agreement, but less strongly than for other forms of intellectual capital. The

moderate variety in the replies is suggested by the standard deviation of 1.218216, showing variation in opinions on this issue more than other components discussed earlier.

This analysis has suggested a majority inclination towards the considering networks as intellectual capital among the respondents, with a significant portion of respondents either neutral or against the disclosure, indicating a more divided opinion compared to other intellectual capital components. This has been aligned with the broader trend of recognizing intellectual capital in financial statements under non-current assets, though it shows that networks as intellectual capital may be more argumentative. The same is presented in the pie chart below.

Pie Chart. 3.17

Pie Chart showing Network as an intangible assets



Organisational Structure:

Based on the data provided, below is the analysis of the responses in relation to organisational structure considered under intellectual capital:

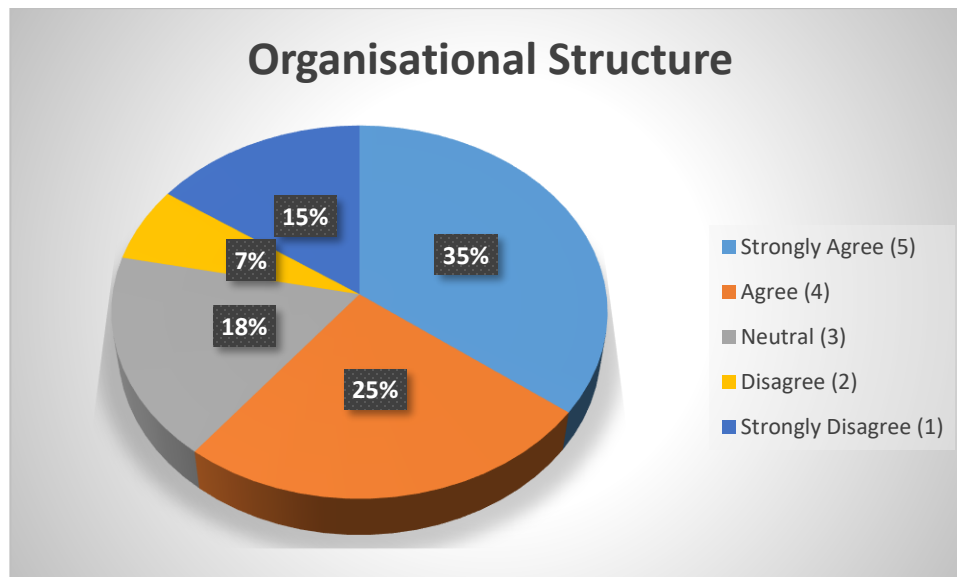
Out of 170 replies, 60 respondents (35.29%) have shown firm response towards considering organisational structure under intellectual capital. Additionally, 25.29% of respondents, or 43 people, have agreed with this revelation. Together, these have indicated roughly 60.58% of respondents have been supported revealing organizational structure in the annual report as intellectual capital. However, 30 respondents (17.65%) have no strong opinion on the matter, indicating their neutral opinion. Likewise, 11 respondents (6.47%) disagreed, and 26 respondents

(15.29%) strongly disagreed, with the idea that organizational structure should be considered as intellectual capital. Although not as strongly as for other forms of intellectual capital, the mean score of 3.588235 has shown a general tendency towards agreement among the respondents. Moderate response variability has been indicated by the standard deviation of 1.388145, indicating that opinions have been more varied on this issue compared to others.

This analysis has suggested a majority inclination towards the acceptance of organisational structure as intellectual capital among the respondents, but with a significant portion of respondents either neutral or against the disclosure, indicating a more diverted opinion compared to other intellectual capital components.

Pie Chart. 3.18

Pie Chart Showing Organisational Structure as an Intangible Assets



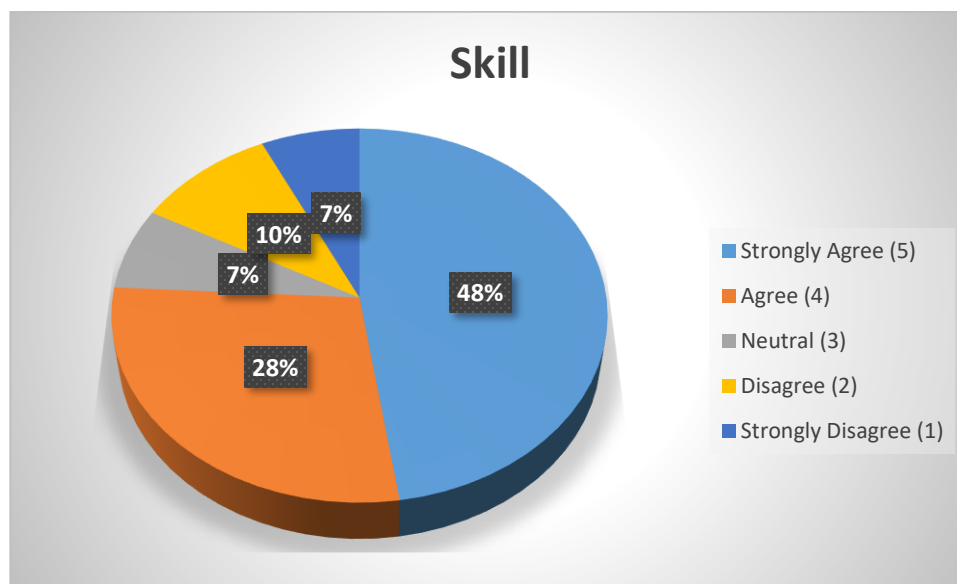
Skills:

Of 170 respondents, a significant majority, 81 respondents (47.65%), strongly believed in accepting skills as intellectual capital. Additionally, 48 respondents (28.24%) agreed with this acceptance. Combined, this accounts for approximately 75.89% of respondents in favor of considering skills as intellectual capital in the annual report. Conversely, 12 respondents (7.06%) remained neutral on the issue, indicating no strong opinion either way. Additionally, 17 respondents (10%) disagreed with believing skills as intellectual capital, while 12 respondents (7.06%) strongly disagreed with this notion.

The mean score of 3.994118 has indicated a general tendency towards agreement among the respondents. The standard deviation of 1.258705 has suggested a moderate variability in the responses, indicating a majority agree or strongly agree, while there has been some diversified opinion among the respondents.

This analysis has suggested a strong inclination towards accepting skills as intellectual capital among the respondents, aligning the broader trend of recognizing intellectual capital in financial statements under non-current assets.

Pie Chart 3.19
Pie Chart showing Skill as an Intangible Assets



Talent:

Based on the data provided, below are the responses regarding the disclosure of talent as intellectual capital:

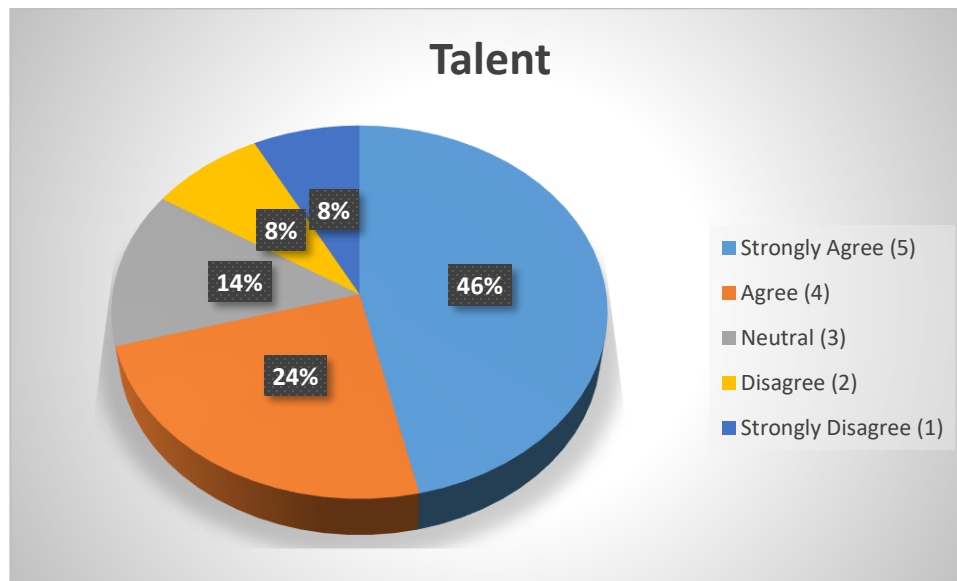
Of 170 respondents, a significant majority, 79 respondents (46.47%), have strongly believed talent as intellectual capital. Additionally, 41 respondents (24.12%) carried the same opinion. Combined this, has accounted for 70.59% of respondents in favor of showing talent as intellectual capital in the annual report. Conversely, 23 respondents (13.53%) remained neutral, indicating no strong opinion either way. Additionally, 14 respondents (8.24%) disagreed with 'talent' as intellectual capital moreover, 13 respondents (7.65%) strongly disagreed with this notion.

The mean score of 3.935294 has indicated a general tendency towards agreement among the respondents. The standard deviation of 1.271518 suggested a moderate variability in the

responses, indicating that while a majority agree or strongly agree, there is some diversity of opinion among the respondents suggesting a strong inclination towards the disclosure of talent as intellectual capital among the respondents, aligning with the broader trend of recognizing intellectual property in financial statements under non-current assets.

Pie Chart 3.20

Pie Chart showing Talent as an Intangible Assets



Experience:

Based on the data provided, here is the analysis of the responses regarding the disclosure of experience as intellectual capital:

From the total of 170 respondents, a significant majority, 75 respondents (44.12%), strongly believed in reflecting experience as intellectual capital. Additionally, 54 respondents (31.76%) agreed with this item. Combined, this has accounted for approximately 75.88% of respondents in favor of disclosing experience as intellectual capital in the annual report.

Conversely, 15 respondents (8.82%) remained neutral, indicating strong opinion either way. Additionally, 15 respondents (8.82%) disagreed with considering experience as intellectual capital, while 11 respondents (6.47%) strongly disagreed with this notion.

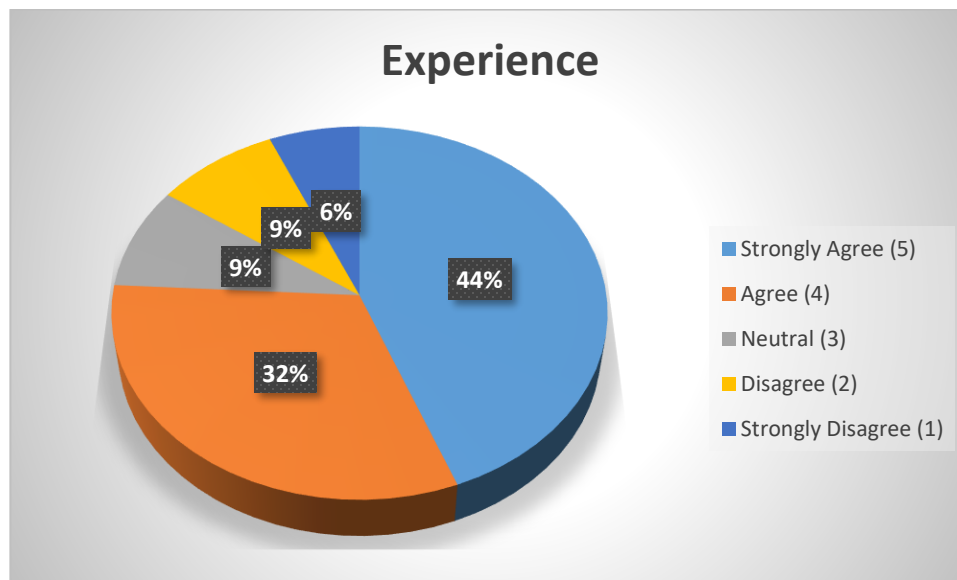
The mean score of 3.982353 has indicated a general tendency towards agreement among the respondents. The standard deviation of 1.212358 has suggested a moderate variability in the

responses, indicating that while a majority agree or strongly agree, there have been some diversity of opinion among the respondents.

This analysis suggested a strong inclination towards the disclosure of ‘experience’ as intellectual capital among the respondents, aligning with the broader trend of recognizing intellectual capital in financial statements under non-current assets.

Pie Chart 3.21

Pie Chart Showing Experience as an Intangible Assets



It has been concluded that most respondents, with an average score over four, identified “Human Resources” as a crucial element of Intellectual Capital, set apart by its non-existence on the balance sheet. On the other hand, some intangible assets that were shown in financial reports have been classified as intellectual capital.

These results highlighted the identification of various elements to make up intellectual capital providing the way for additional research into valuation techniques in this field. Thus, approaching quantified intellectual capital has been investigated in the later part.

Methods of Measuring Intellectual Capital

Table 3.35 examines the level of awareness among respondents regarding various methods for measuring Intellectual Capital. The table provides data on the frequency and percentage distribution of respondents' affirmative and negative responses to this awareness question.

Table 3.35

Table showing Awareness of methods of measuring Intellectual Capital

Are you aware about different methods of measuring Intellectual Capital	Frequency	Percent
Yes	88	51.76%
No	82	48.24%
Total	170	100

As presented in a table, a significant proportion, comprising 52.10% of the respondents have exhibited awareness regarding the existence of specific methodologies for measuring Intellectual Capital. Statistical representation has been depicted visually in Graph 3.22, confirming the opinion among respondents regarding the methods employed in quantifying Intellectual Capital.

Graph 3.22

Graph showing Awareness about different methods of measuring Intellectual Capital

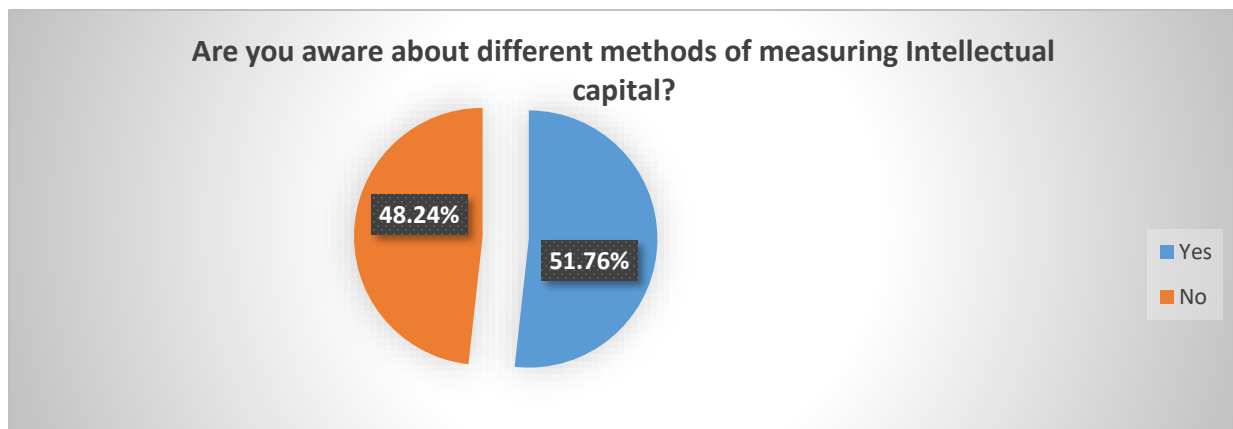


Table 3.36 provides an evaluation of respondents' familiarity with various methods portrayed to measure Intellectual Capital. The table presents data on the number of respondents (Yes and No), along with the corresponding percentages, regarding their awareness of each selected method. This table offers insights into the extent to which respondents have been informed about different Intellectual Capital measurement approaches.

Table 3.36**Table showing Different method of Intellectual Capital**

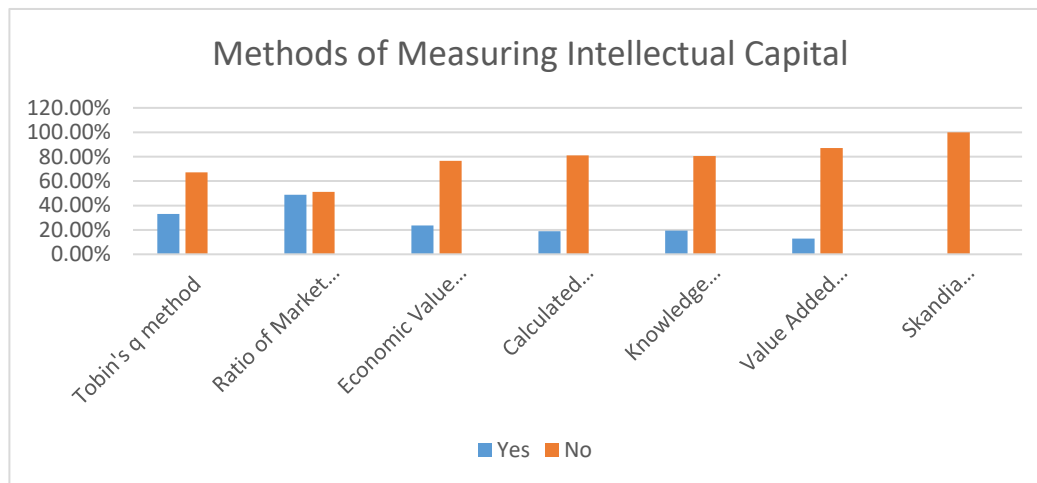
Which of the following method/methods of measuring Intellectual Capital you are aware of?				
Selected Methods	Yes	Percent	No	Percent
Tobin's q method	56	32.94%	114	67.06%
Ratio of Market value to Book value method	83	48.82%	87	51.18%
Economic Value Added	40	23.58%	130	76.47%
Calculated Intangible Value (CIV) method	35	18.82%	135	81.18%
Knowledge Capital Earnings (KCE TM) method	33	19.42%	137	80.59%
Value Added Intellectual Coefficient (VAIC TM) method	22	12.94%	148	87.06%
Skandia Navigator Intellectual Capital	0	0	170	100%

The table above has displayed respondent awareness regarding various Intellectual Capital measurement methods and their corresponding calculation methodologies. Among the respondents, 44 (25.88%) lacked awareness of the methods presented, indicating partial familiarity with Intellectual Capital measurement approaches. Conversely, 126 (74.12%) respondents demonstrated awareness of the methods and their associated calculations. This awareness has facilitated data collection on the variable of measuring Intellectual Capital. The questionnaire has allowed multiple method selections, and the combined responses indicating the majority, 83 (48.82%), have been knowledgeable about the Market-to-Book Value Ratio method. This had been followed by Tobin's q method, endorsing 56 (32.94%) respondents sharing similarities with the former. Additionally, 40 respondents (23.58%) recognized the Economic Value-Added method's relevance in assessing Intellectual Capital beyond corporate performance, followed by 35 respondents familiar with Calculated Intangible Value (CIV) method and 33 respondents have been aware of Knowledge Capital Earning (KCE) methods. The most common method has been VAICTM based on the literature review, but the same has been the least famous amongst respondents. Respondents have shown awareness of methods of Calculated Intangible Value and Knowledge Capital Earnings, the Value-Added Intellectual Coefficient method, has been used frequently by researchers and has been known to fewer participants (22 respondents or 12.94%). The Skandia Navigator Intellectual Capital method,

being qualitative, may explain respondents' limited awareness. This information has been depicted in Graph 3.8.

Graph 3.23

Graph showing Methods of Measuring Intellectual Capital



Opinion relating to the disclosing of Intellectual capital value in financial statements.

The next part of the questionnaire has been related to the opinion relating to the disclosure of the value of Intellectual capital in the financial statements and relating to develop new methods for measuring intellectual capital.

Table 3.38 explores respondents' perspectives on the disclosure of Intellectual Capital value in financial statements. The table provides data on the frequency and percentage distribution of respondents who agree or disagree with the proposed statements.

Table 3.38

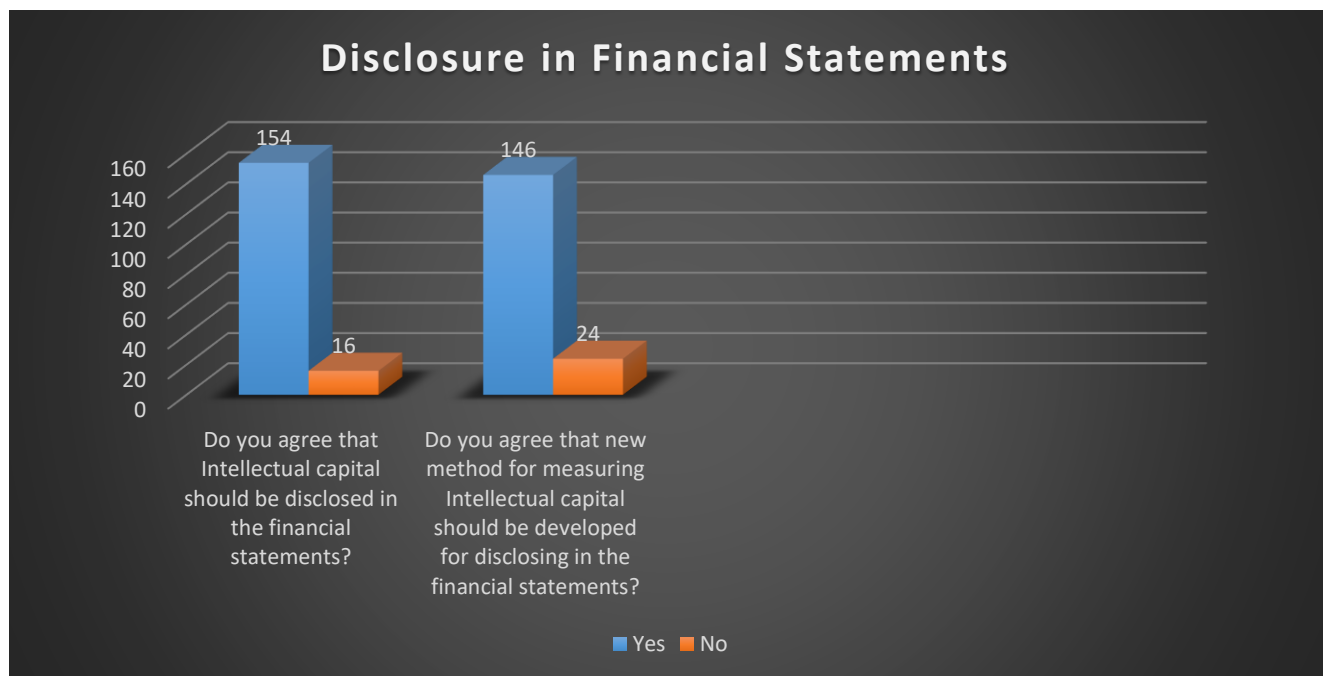
Table showing Disclosure of Intellectual Capital value in Financial Statement

Selected criteria	Yes	Percent	No	Percent
Do you agree that new method for measuring Intellectual capital should be developed for disclosing in the financial statements?	146	85.88%	24	14.12%
Do you agree that Intellectual capital should be disclosed in the financial statements?	154	90.59%	16	9.41%

The tabular representation has indicated a substantial majority, comprising 90.59% or 154 respondents, has advocated for the disclosure of the value of Intellectual Capital within financial statements. Moreover, 85.88% or 146 respondents have expressed a strong belief in the necessity of developing new methodologies to measure Intellectual Capital, thereby facilitating its disclosure in financial statements. Out of 154 respondents, 8 respondents believed that there has been no new method for measuring intellectual capital. The opinions expressed by these respondents hold significant implications for researchers, as it has provided valuable insights into the prioritization of variables considering within the domain of Intellectual Capital. This data has served as a foundational resource for researcher describing and emphasizing pertinent variables contributing to Intellectual Capital valuation processes. The same has been presented in the graph below (3.25)

Graph 3.25

Graph showing Disclosure of Intellectual Capital in Financial Statements



Employee Competence: Variables of human capital relating to employee performance-employee and management competence, continuous training, high education, updated skills, solving problems, leadership skills, to name a few, have been adopted.

Table: 3.39

Table showing Response of respondents towards Employee Competence

Variables of Managerial Competence to be considered in Intellectual Capital								
a. Employee Benefit costs consist of the following categories and subcategories.								
Particulars	Extremely Important (5)	Important (4)	Moderately Important (3)	Slightly Important (2)	Not at all Important (1)	Total	Mean	Standard Deviation
<i>Employees undergo continuous training</i>	90 (52.94%)	51 (30%)	15 (8.82%)	3 (1.76%)	11 (6.47%)	170	4.211765	1.110404
<i>Employees are highly educated</i>	87 (51.17%)	31 (18.23%)	39 (22.94%)	2 (1.17%)	11 (6.47%)	170	4.064706	1.172385
<i>Employee skills are upgraded</i>	102 (60%)	51 (30%)	4 (2.35%)	2 (1.17%)	11 (6.47%)	170	4.358824	1.063409
<i>Employees are motivated to share new and innovative ideas</i>	113 (66.47%)	41 (24.11%)	3 (1.76%)	2 (1.17%)	11 (6.47%)	170	4.429412	1.064914
b. Managers' Attitude consists of the following categories and subcategories.								
<i>Managers Make sure that employees are happy</i>	92 (54.11%)	52 (30.58%)	15 (8.82%)	3 (1.76%)	8 (4.71%)	170	4.276471	1.026299

Managers understand all factors of employee satisfaction	100 (58.82%)	42 (24.70%)	8 (4.70%)	14 (8.23%)	6 (3.53%)	170	4.270588	1.102855
Managers help employees in solving official problems	95 (55.88%)	58 (34.11%)	6 (3.53%)	5 (2.94%)	6 (3.53%)	170	4.358824	0.951833
Leadership skills	96 (56.47%)	26 (15.29%)	39 (22.94%)	2 (1.17%)	7 (4.12%)	170	4.188235	1.087793
Management is supportive to innovations	98 (57.64%)	51 (30%)	12 (7.05%)	2 (1.17%)	7 (4.12%)	170	4.358824	0.970304

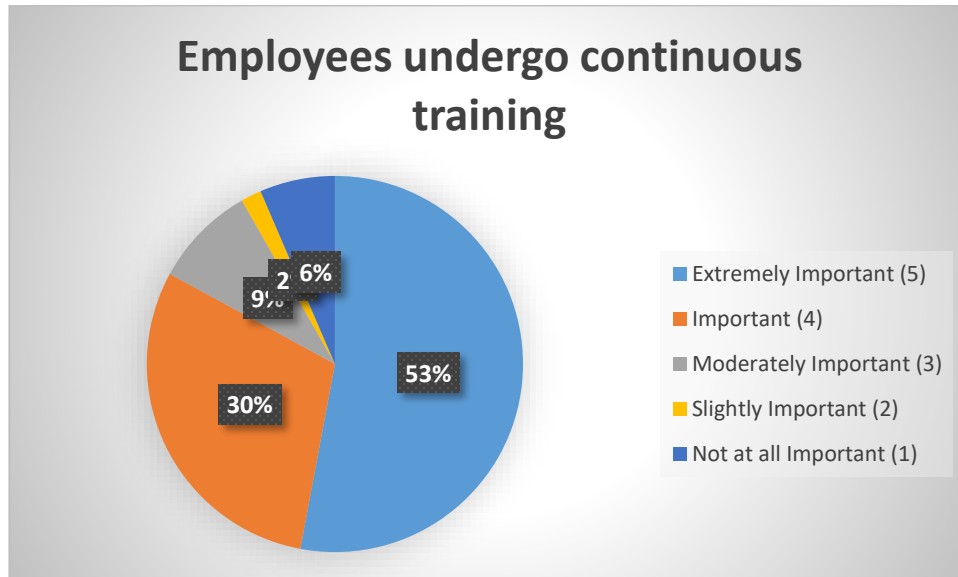
Employees undergo continuous training:

A significant majority, 90 respondents (52.94%) has considered ‘employees undergo continuous training’ as extremely important (rating of 5). Combined this accounted for approximately 82.94% of respondents in favor of continuous training for employees. A smaller portion, i.e. 8.82%, view it as moderately important (rating of 3), while 3 respondents (1.76%) rated it as slightly important, and 11 respondents (6.47%) see it as not at all important (rating of 1).

The mean score of 4.2 has indicated a general tendency towards considering continuous training as important, and the standard deviation of 1.106567 has suggested a moderate variability in the responses, suggesting some variation in the importance placed on this factor across the respondents. The data shows a strong preference for continuous employee training, but with a miniscule number imparting lower importance to the same.

Pie Chart 3.26

Pie Chart showing Employees undergo continuous training



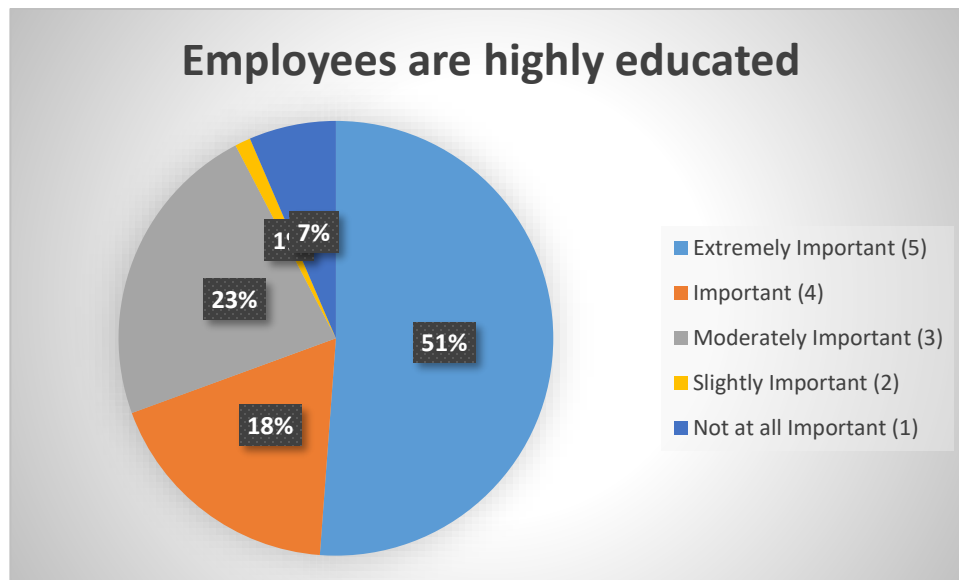
Employees are highly educated:

A significant majority, 87 respondents (51.18%), has considered 'Employees are highly educated' as extremely important (rating of 5). Combined this accounted for approximately 69.41 % of respondents in favor of 'employees are highly educated'. A significant portion of 39 respondents (22.94%) view it as moderately important (rating of 3), while 2 respondents (1.18%) rated it as slightly important, and 11 respondents (6.47%) see it as not at all important (ration of 1).

The mean score of 4.071765 has indicated a general tendency towards considering continuous training as important, and the standard deviation of 1.179192 has suggested a moderate variability in the responses, suggesting some variation in the importance placed on this factor across the respondents. The data shows a strong preference for 'employees are highly educated', but with a minority of respondents giving lower significance to the same.

Pie Chart 3.27

Pie Chart showing Employees are highly educated



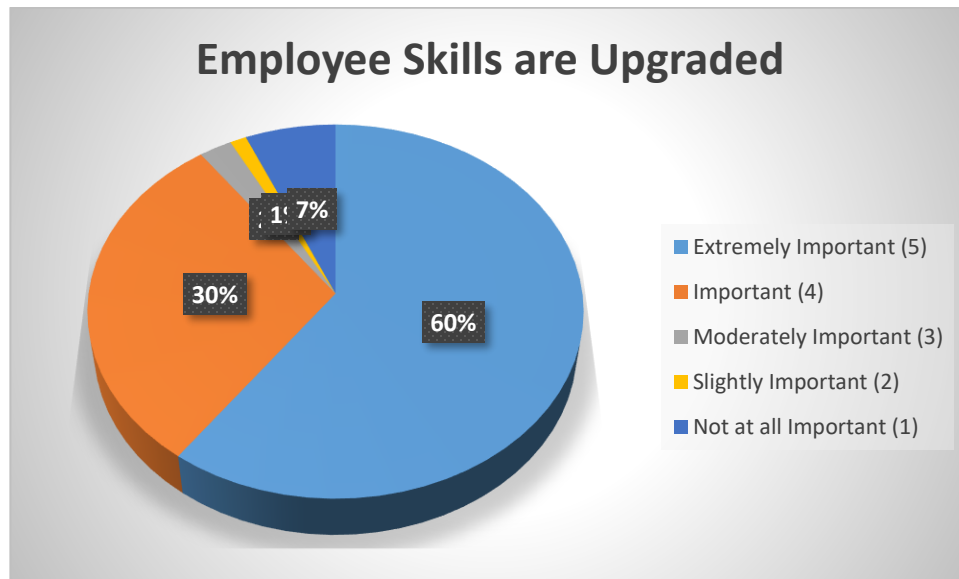
Employee skills are upgraded:

A significant majority, 102 respondents (60%), has considered 'Employees skills are upgraded' as extremely important (rating of 5). Combined this accounted for approximately 90% of respondents in favor of 'Employees skills are upgraded'. A minor portion of 4 respondents (2.35%) view it as moderately important (rating of 3), while 2 respondents (1.18%) rated it as slightly important, and 11 respondents (6.47%) see it as not at all important (ration of 1).

The mean score of 4.359 has indicated a general tendency towards considering continuous training as important, and the standard deviation of 1.094588 has suggested a moderate variability in the responses, suggesting some variation in the importance placed on this factor across the respondents. The data shows a strong preference for 'employees skills are upgraded', but with a minority of respondents imparting lower significance to the same.

Pie Chart 3.28

Pie chart showing Employee skills are upgraded



Employees are Motivated to Share New and Innovative Ideas

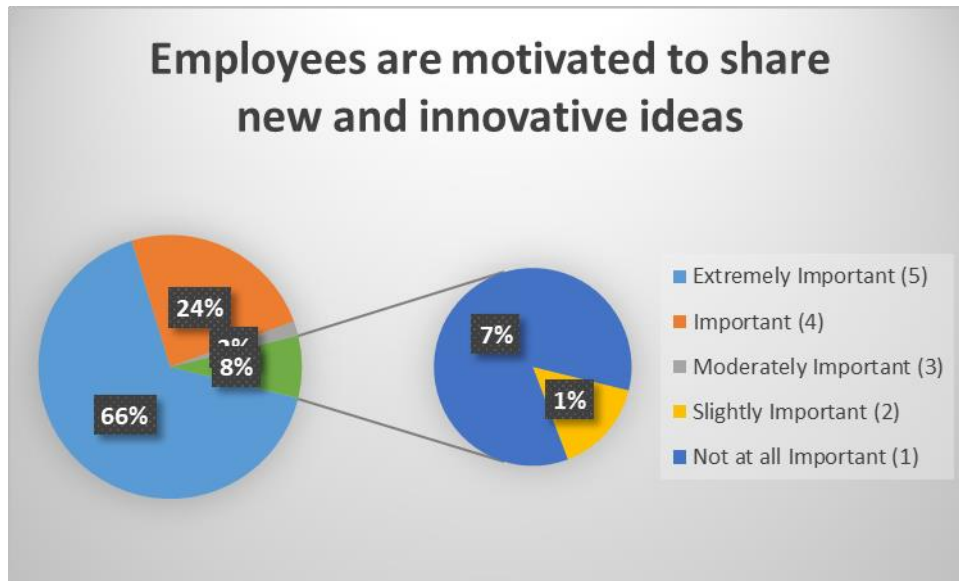
Based on the data provided, below has been the analysis of the responses regarding employees' motivation to share new and innovative ideas:

The data shows that 113, (66.47%) of respondents consider 'Employees are motivated to share new and innovative ideas' extremely important (rating of 5), and 24.12% find it important (rating of 4). A smaller proportion, 1.76%, view it as moderately important (rating of 3), while 1.18% rate it as slightly important (rating of 2), and 6.47% see it as not at all Important (rating of 1).

With a mean score of 4.429, the overall sentiment leans toward considering the motivation of employees to share new and innovative ideas as important. The standard deviation of 1.062272 indicates moderate variability in responses, suggesting some variation in the importance placed on this factor across the respondents. The data highlights a strong preference for employees sharing new and innovative ideas, but with a notable minority that places lower importance to it.

Pie Chart 3.29

Pie Chart showing Managers understand all factors of employee satisfaction



Managers' Attitude consist of the following categories and subcategories.

Managers Make Sure that Employees are Happy

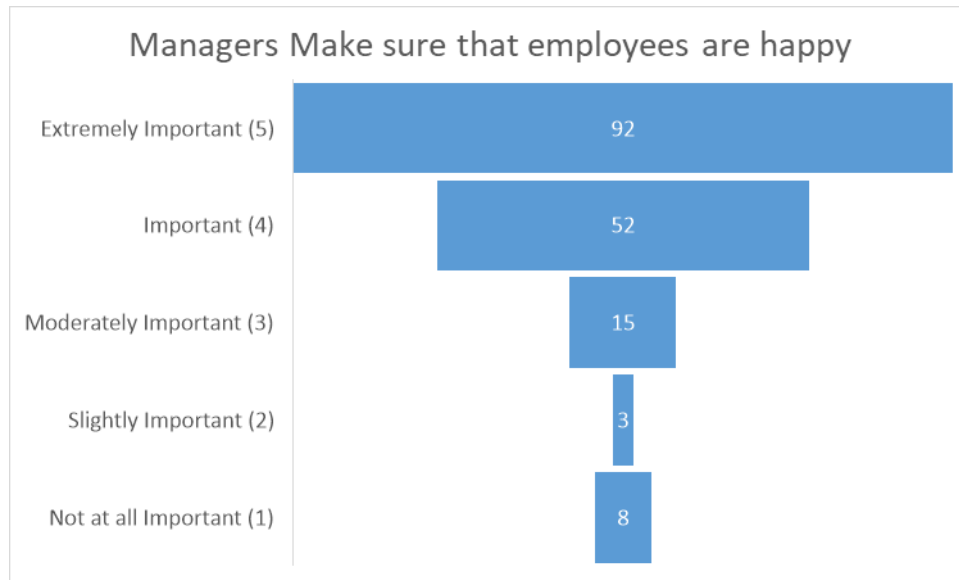
Based on the data provided, the analysis of the responses regarding 'managers ensuring that employees are happy' is given below:

The data shows that 92, (54.12%) of respondents consider 'managers ensuring that employees are happy' extremely important (rating of 5), and 30.59% find it important (rating of 4). A smaller proportion, 8.82%, view it as moderately important (rating of 3), while 1.76% rate it as slightly important (rating of 2), and 4.71% see it as not at all Important (rating of 1). Decline of the opinion has been presented in the funnel chart below.

With a mean score of 4.276, the overall sentiment leans toward considering managers ensuring that employees are happy as important. The standard deviation of 1.02503 indicates moderate variability in responses, suggesting some variation in the importance placed on this factor across the respondents. The data highlights a strong preference for employees sharing new and innovative ideas, but with a notable minority that places lower importance to it.

Pie Chart 3.30

Pie Chart showing Managers Make Sure that employees are happy



Managers understand all factors of employee satisfaction

The data shows that 100, (58.82%) respondents have considered 'Managers understand all factors of employee satisfaction' extremely important (rating of 5), and 24.71% (42 respondents) found it important (rating of 4). A smaller proportion, 4.71%, viewed it moderately important (rating of 3), while 8.24% rated it as slightly important (rating of 2), and 3.53% saw it, not at all Important (rating of 1).

With a mean score of 4.271, the overall sentiment leaned toward considering managers understand all factors of employee satisfaction as important. The standard deviation of 1.099055 indicated moderate variability in responses, suggesting some variation in the importance placed on this factor across the respondents. The data highlighted a strong preference for employees sharing new and innovative ideas, yet with a notable minority that places lower importance to it.

This analysis suggests a robust inclination towards the perception that managers have a comprehensive understanding of all factors contributing to employee satisfaction, reflecting effective managerial awareness and employee engagement practices within the organization.

Pie Chart 3.31

Pie Chart showing Managers understand all factors of employee satisfaction



Managers Help Employees in Solving Official Problems

Based on the data provided, here is the analysis of the responses regarding managers helping employees in solving official problems:

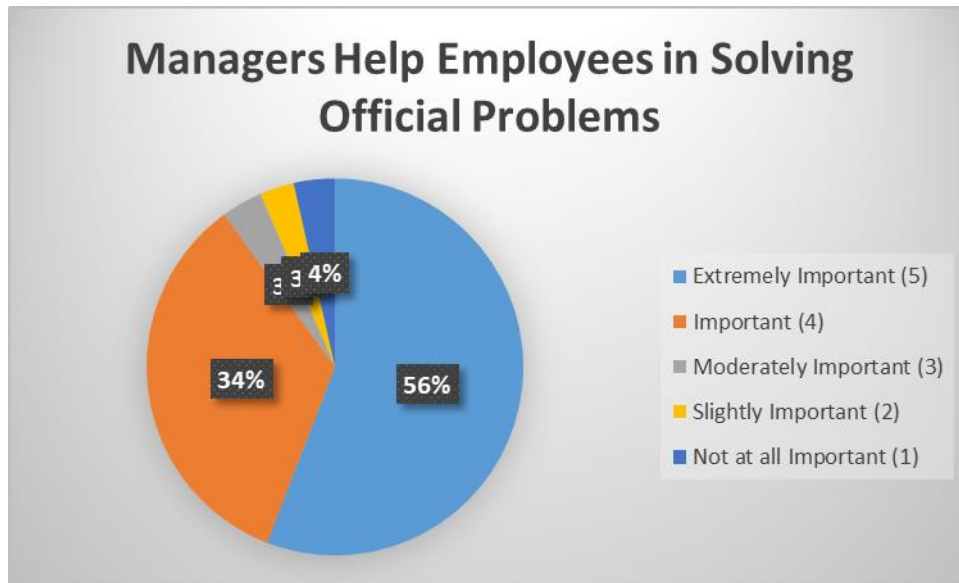
The data shows that 95, (55.88%) respondents have considered ‘Managers help employees in solving official problems’ extremely important (rating of 5), and 34.12% (42 respondents) found it important (rating of 4). A smaller proportion, 3.53%, viewed it moderately important (rating of 3), while 2.94% rated it as slightly important (rating of 2), and 3.53% saw it, not at all Important (rating of 1).

With a mean score of 4.359, the overall sentiment leaned toward considering Managers help employees in solving official problems as important. The standard deviation of 0.94911 indicated moderate variability in responses, suggesting some variation in the importance placed on this factor across the respondents. The data highlighted a strong preference for employees sharing new and innovative ideas, but with a notable minority that places lower importance to it.

This analysis suggested a robust inclination towards the perception that managers are actively helping employees to solve official problems, reflecting a supportive managerial approach that fosters problem-solving and collaboration within the organization.

Pie Chart 3.32

Pie Chart showing Managers Help Employees in Solving Official Problems



Leadership Skills

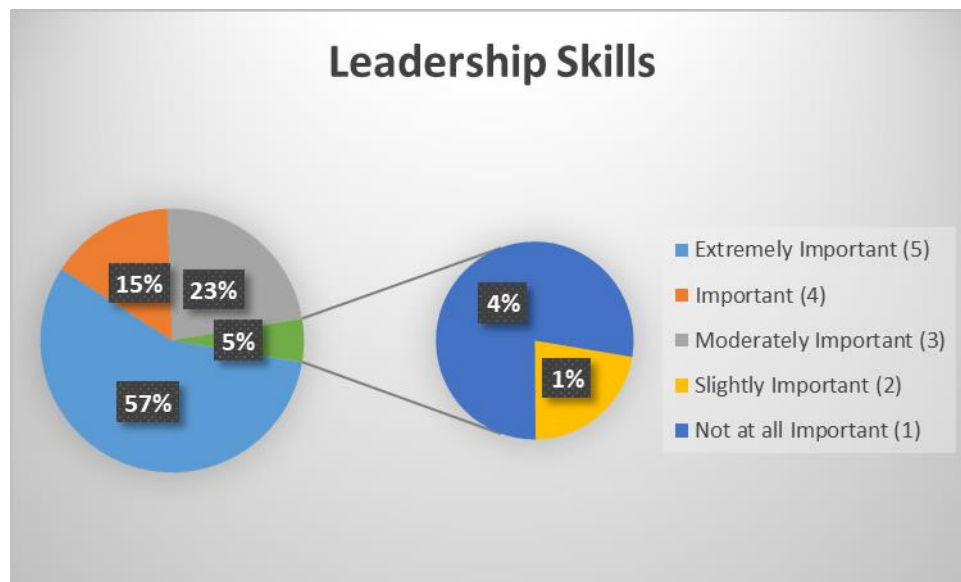
Based on the data provided, here is the analysis of the responses regarding the perception of leadership skills:

The data shows that 96 (56.47%) respondents considered Leadership Skills' extremely important (rating of 5), and 15.29% (26 respondents) found it important (rating of 4). A significant proportion, 22.94%, viewed it moderately important (rating of 3), while 1.18% rated it as slightly important (rating of 2), and 4.12% saw it, not at all Important (rating of 1).

With a mean score of 4.188, the overall sentiment leaned toward considering 'leadership skills' as important. The standard deviation of 1.084783 indicated moderate variability in responses, suggesting some variation in the importance placed on this factor across the respondents. The data highlighted a strong preference for employees sharing new and innovative ideas, but with a notable minority that places lower importance to it.

This analysis has indicated a positive perception of leadership skills among the respondents, with a significant majority expressing strong agreement or agreement. The presence of moderate variability suggests that while the overall sentiment is favorable, there is a range of opinions on the effectiveness of leadership skills within the organization.

Pie Chart 3.33
Pie Chart showing Leadership Skill



Management is supportive to innovations:

Based on the data provided, here is the analysis of the responses regarding management's support for innovations:

The data shows that 98, (57.65%) respondents have considered 'Management is supportive for innovations', extremely important (rating of 5), and 30% (51 respondents) found it important (rating of 4). A smaller proportion, 7.06%, viewed it moderately important (rating of 3), while 1.18% rated it as slightly important (rating of 2), and 4.12% saw it, not at all Important (rating of 1).

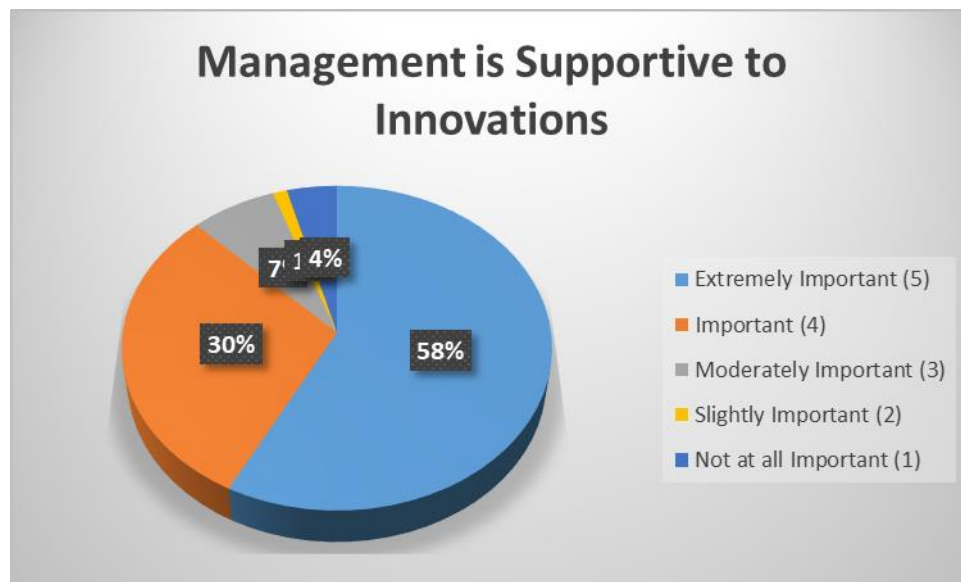
With a mean score of 4.359, the overall sentiment leaned toward considering 'Management is supportive for innovations' as important. The standard deviation of 0.954575 indicated moderate variability in responses, suggesting some variation in the importance placed on this factor across

the respondents. The data highlighted a strong preference for employees sharing new and innovative ideas, but with a notable minority that places lower importance to it.

This analysis indicated a strong perception of management’s support for innovations among the respondents, with a substantial majority expressing strong agreement or agreement.

Pie Chart 3.34

Pie Chart showing Management is supportive to innovations.



Out of all the criteria Employees are motivated to share new and innovative ideas are extremely important by maximum respondents while for leadership skills are moderately important by maximum respondents. The table also includes statements related to employee skills upgraded, managerial actions to ensure employee happiness, understanding of factors affecting employee satisfaction, assistance in problem-solving, leadership skills, and management support for innovations, each with its corresponding response distribution.

These findings have provided insights into employee perceptions and experiences within the organization, suggesting varying levels of agreement across different statements. Such data proved to be valuable for understanding employee sentiments and identifying areas for improvement in organizational policies and practices where employees should be given more importance while valuing intellectual capital.

From the above table it is evident that respondents expressed their importance with most of the criteria for the significance of human capital in measurement of Intellectual capital as both employee competence and manager's attitude both are part of human capital, as adopted by Hardeep Chahal and Purnima Bakshi (2016).

Structural Capital

The table below represents the respondents' response for Structural Capital on a five-point Likert scale from extremely important to not at all important.

Table: 3.40

Table showing Response of respondents towards Structural Capital

Structural capital consists of the following categories and subcategories.								
Particulars	Extremely Important (5)	Important (4)	Moderately Important (3)	Slightly Important (2)	Not at all Important (1)	Total	Mean	Standard Deviation
Firm is efficient	57 (33.52%)	77 (45.29%)	25 (14.7%)	3 (1.76%)	8(4.7%)	170	4.011765	0.991014
Procedures support innovation	48 (28.23%)	78 (45.88%)	23 (13.52%)	13 (7.64%)	8 (4.7%)	170	3.852941	1.063998
Increase revenue per employee	92 (54.11%)	41 (24.11%)	26 (15.29%)	1 (0.588%)	10 (5.88%)	170	4.241176	1.046583
Systems allow easy information access	66 (38.82%)	62 (36.47%)	24 (14.11%)	18 (10.58%)	0	170	4.035294	0.978431
Administrative Expenses consist of the following categories and subcategories.								
Staff members are happy to put extra efforts when needed	89 (52.35%)	31 (18.23%)	31(18.23%)	18 (10.58%)	1 (0.58%)	170	4.111765	1.084797
Atmosphere is supportive	70 (41.17%)	34 (20%)	57 (33.52%)	8 (4.705%)	1 (0.588%)	170	3.964706	0.996408
Firm is bureaucratic nightmare	71 (41.76%)	41 (24.11%)	48 (28.23%)	9 (5.29%)	1 (0.588%)	170	4.011765	0.985025
Supports development of ideas	74 (43.52%)	45 (26.47%)	40 (23.52%)	2 (1.17%)	9 (5.29%)	170	4.017647	1.095842
Do not share knowledge	67 (39.41%)	29(17.05%)	48 (28.23%)	7 (4.11%)	19 (11.17%)	170	3.694118	1.328108
Research and Development expenses consist of the following categories and subcategories.								
Transaction time is decreasing	77 (45.29%)	48 (28.23%)	27 (15.88%)	9 (5.29%)	9 (5.29%)	170	4.029412	1.143163

Product life cycle trend	85 (50%)	40 (23.52%)	24 (14.11%)	12 (7.05%)	9 (5.29%)	170	4.058824	1.185244
Implement new ideas	87 (51.17%)	30 (17.64%)	43 (25.29%)	2 (1.17%)	8 (4.7%)	170	4.094118	1.110717
Improving Cost Per Revenue	85 (50%)	33 (19.41%)	42 (24.7%)	9 (5.29%)	1 (0.58%)	170	4.129412	1.000452
Research and Development invested in product design	97 (57.05%)	32 (18.82%)	21 (12.35%)	18 (10.58%)	2 (1.17%)	170	4.2	1.091115

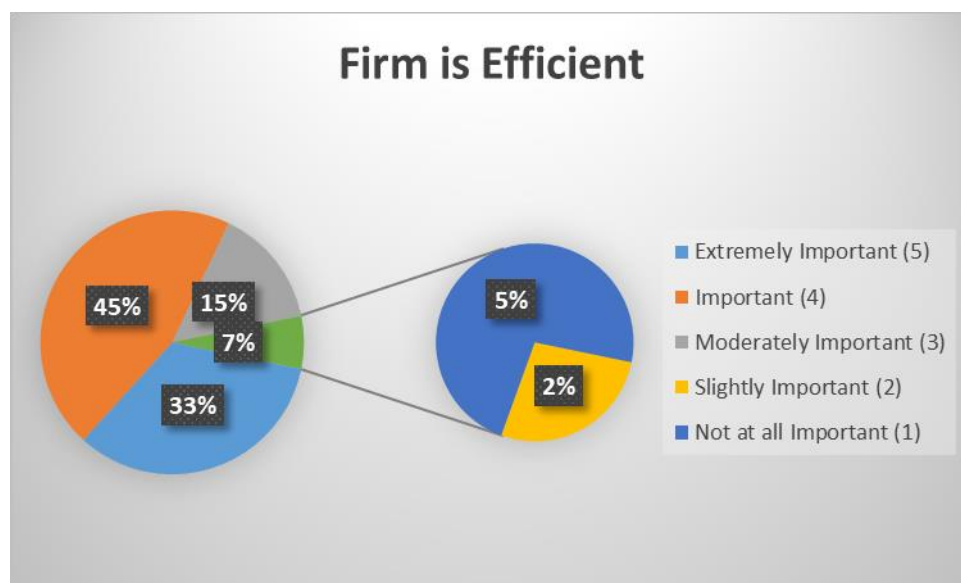
Firm is Efficient

The data shows that 57 (33.53%) respondents considered ‘firm is efficient’, extremely important (rating of 5), and 45.29% (77 respondents) found it important (rating of 4). A smaller proportion, 14.71%, viewed it moderately important (rating of 3), while 1.76% rated it as slightly important (rating of 2), and 6.47% responded it, not at all Important (rating of 1).

With a mean score of 4.0118, the overall sentiment leaned toward considering ‘firm is efficient’ as important. The standard deviation of 0.9910 indicated moderate variability in responses, suggesting some variation in the importance placed on this factor across the respondents. The data highlighted a strong preference for ‘firm is efficient’ but with a notable minority that places lower importance to it.

Pie Chart 3.35

Pie Chart showing Firm is Efficient



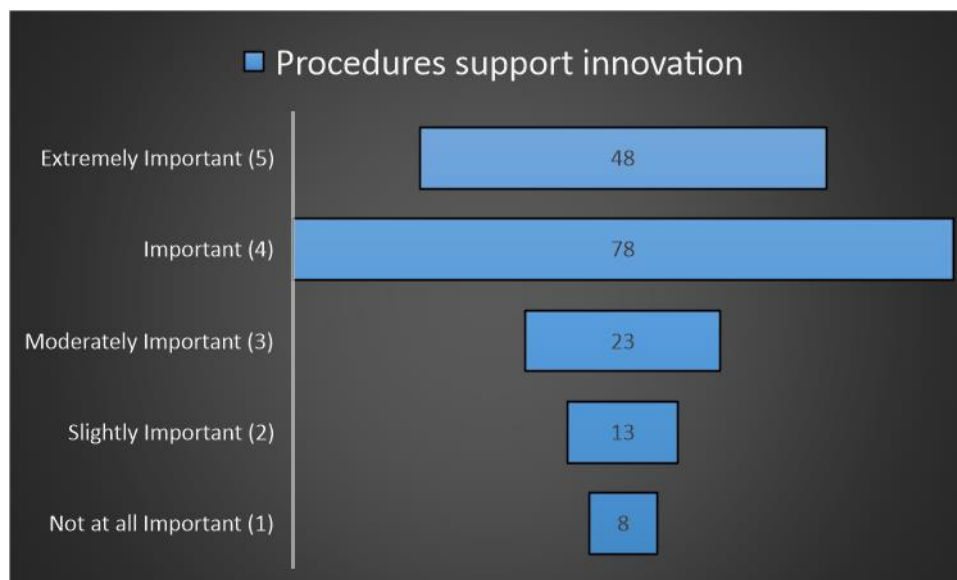
Procedures Support Innovation

The data shows that 48, (28.24%) respondents have considered ‘Procedures Support innovations’, extremely important (rating of 5), and 45.88% (78 respondents) found it important (rating of 4). A smaller proportion, 13.53%, viewed it moderately important (rating of 3), while 7.65% rated it as slightly important (rating of 2), and 4.71% saw it, not at all Important (rating of 1).

With a mean score of 3.8529, the overall sentiment leaned toward considering ‘Procedures support innovations’ as important. The standard deviation of 1.0640 indicated moderately high variability in responses, suggesting some variation in the importance placed on this factor across the respondents. The data highlighted a strong preference for procedures support innovations, but with a notable minority that places lower importance to it.

Graph 3.36:

Graph showing Procedures support innovations



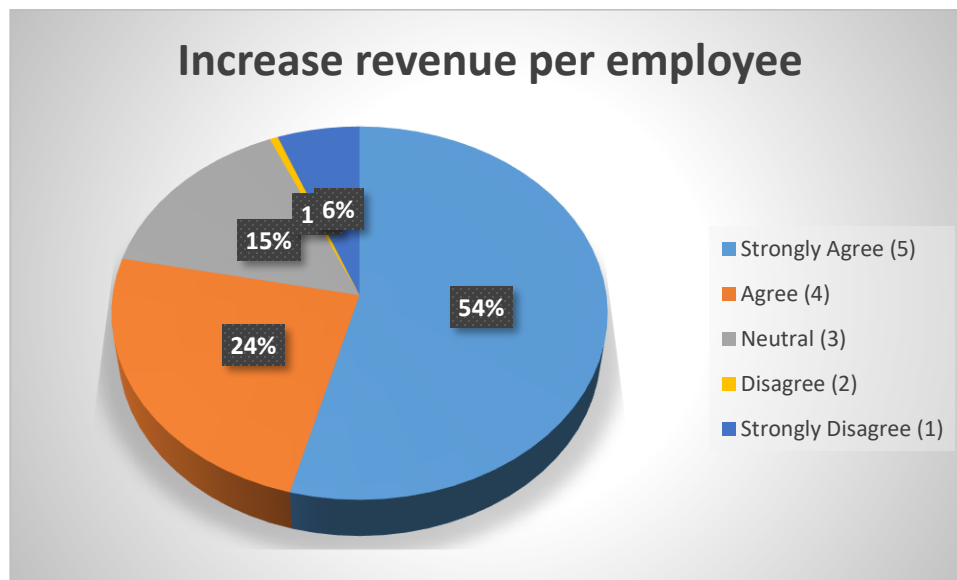
Increase Revenue Per Employee:

The data shows that 92, (54.12%) respondents have considered ‘Increase revenue per employee’, extremely important (rating of 5), and 24.12% (41 respondents) found it important (rating of 4). A smaller proportion, 15.29%, viewed it moderately important (rating of 3), while 0.59% rated it as slightly important (rating of 2), and 5.88% saw it, not at all Important (rating of 1).

With a mean score of 4.2412, the overall sentiment leaned toward considering ‘Increase revenue per employee’ as important. The standard deviation of 1.0466 indicated moderate variability in responses, suggesting some variation in the importance placed on this factor across the respondents. The data highlighted a strong preference for ‘Increase revenue per employee’, but with a notable minority that places lower importance to it.

Pie Chart 3.37

Pie Chart showing Increase revenue per employee.



Systems Allow Easy Information Access

The table presents the distribution of responses to the statement “Systems allow easy information access” using a Likert scale, along with the corresponding mean and standard deviation.

The data shows that 66, (38.82%) respondents have considered ‘Systems allow easy information access’, extremely important (rating of 5), and 36.47% (62 respondents) found it important (rating of 4). A smaller proportion, 14.12%, viewed it moderately important (rating of 3), while 10.59% rated it as slightly important (rating of 2), and 0% saw it, not at all Important (rating of 1).

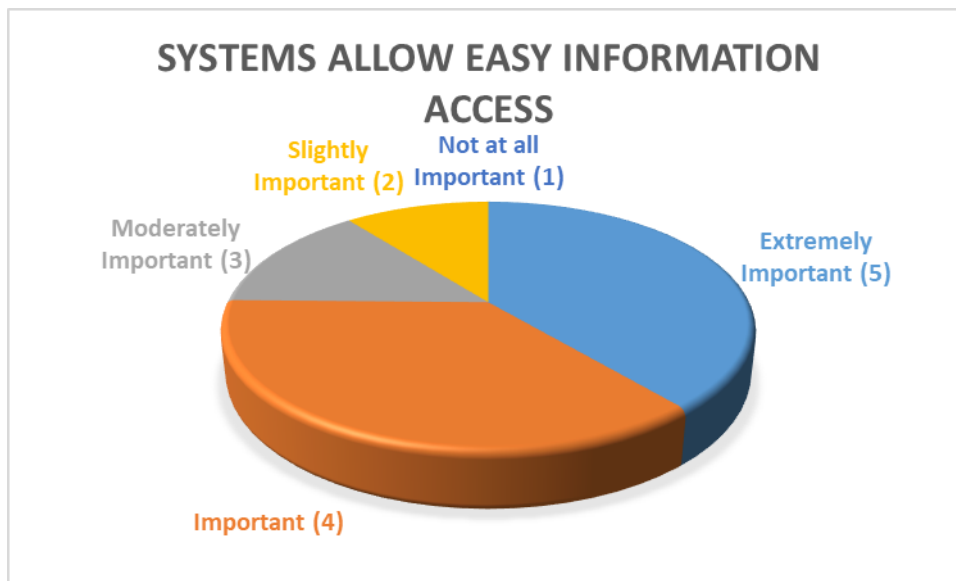
With a mean score of 4.04, the overall sentiment leaned toward considering ‘Systems allow easy information access’ as important. The standard deviation of 0.98 indicated moderate variability in responses, suggesting some variation in the importance placed on this factor across the

respondents. The data highlighted a strong preference for ‘Systems allow easy information access’ but with a notable minority that places lower importance to it.

These results suggest that many users find the systems effective in facilitating easy access to information, although opinions do vary to some extent.

Pie Chart 3.38

Pie Chart showing Systems Allow Easy Information Access.



Administrative Expenses consist of the following categories and subcategories.

Staff Members are Happy to Put Extra Efforts when Needed

The table presents the distribution of responses to the statement “Staff members are happy to put extra efforts when needed” on a Likert scale, alongside the corresponding mean and standard deviation.

The data shows that 89, (52.35%) respondents have considered ‘Staff members are happy to put extra efforts when needed’, extremely important (rating of 5), and 18.24% (31 respondents) found it important (rating of 4). A smaller proportion, 18.24%, viewed it moderately important (rating of 3), while 10.59% rated it as slightly important (rating of 2), and 0.59% saw it, not at all Important (rating of 1).

With a mean score of 4.11, the overall sentiment leaned toward considering ‘Staff members are happy to put extra efforts when needed’ as important. The standard deviation of 1.08 indicated moderate variability in responses, suggesting some variation in the importance placed on this

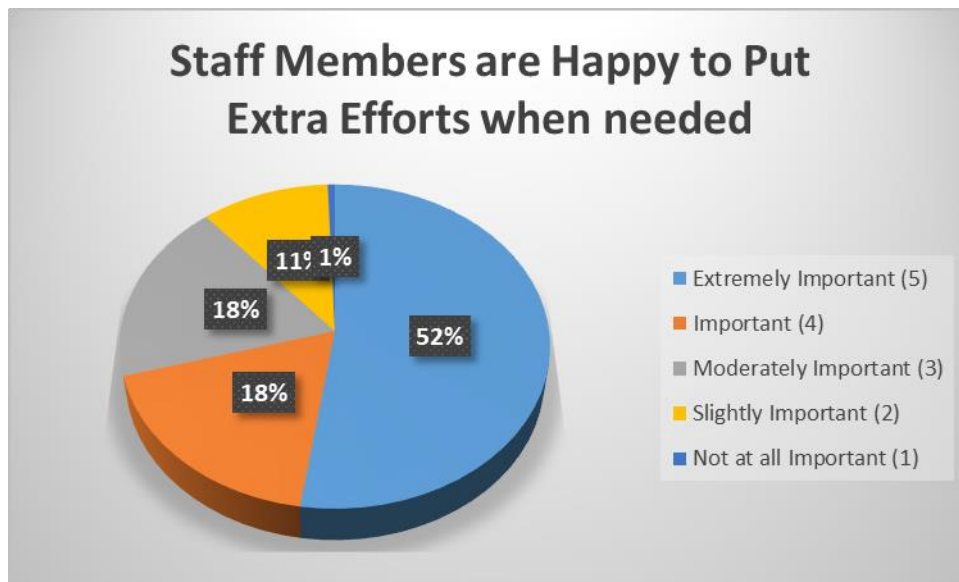
factor across the respondents. The data highlighted a strong preference for ‘Staff members are happy to put extra efforts when needed’, but with a notable minority that places lower importance to it.

This suggests that, while there is a prevailing positive sentiment regarding the willingness of staff members to put in extra effort when needed, there is some degree of variation in opinions.

These results suggest that a significant proportion of staff members are perceived to be willing to exert additional effort when required, although there is a range of scales to this issue.

Pie Chart 3.39

Pie Chart showing Staff members are happy to put extra efforts when needed.



Atmosphere is Supportive

The table presents the distribution of responses to the statement “Atmosphere is supportive” using a Likert scale, along with the corresponding mean and standard deviation.

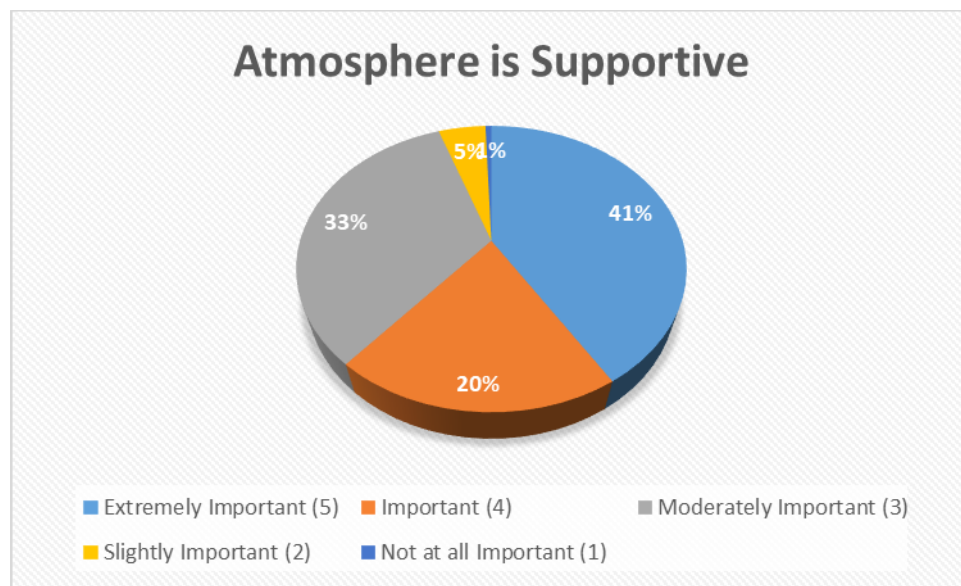
The data shows that 70, (41.18%) respondents have considered ‘Atmosphere is supportive’, extremely important (rating of 5), and 20% (34 respondents) found it important (rating of 4). A smaller proportion, 33.53%, viewed it moderately important (rating of 3), while 4.71% rated it as slightly important (rating of 2), and 0.59% saw it, not at all Important (rating of 1).

With a mean score of 3.96, the overall sentiment leaned toward considering ‘Atmosphere is supportive’ as important. The standard deviation of 0.996 indicated moderate variability in responses, suggesting some variation in the importance placed on this factor across the respondents. The data highlighted a strong preference for ‘Atmosphere is supportive’, but with a notable minority that places lower importance to it

Results suggested that a significant number of respondents perceive the atmosphere as supportive, although there is a notable range of perspectives, with a substantial number of respondents remaining neutral.

Pie Chart 3.40

Pie Chart showing Atmosphere is supportive.



Firm is a Bureaucratic Nightmare

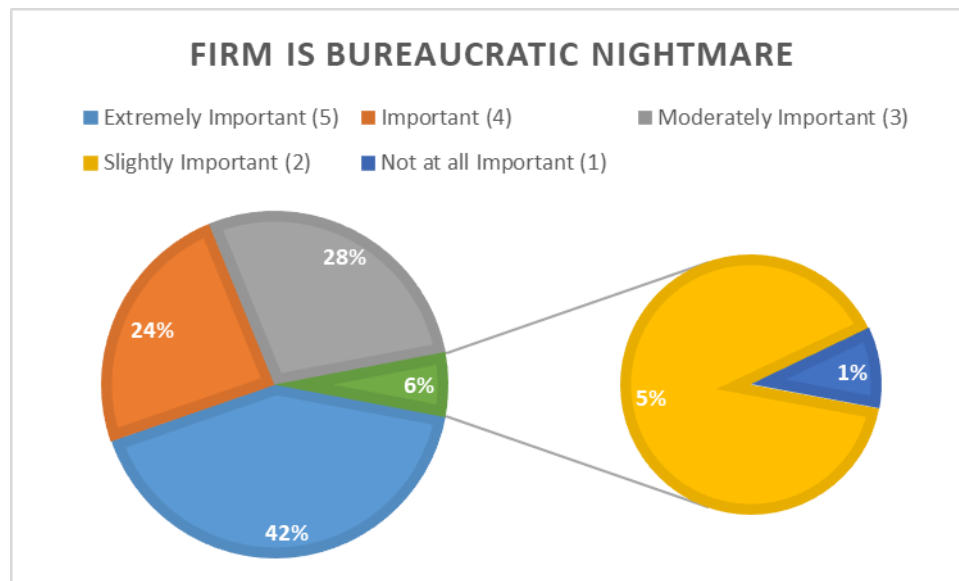
Interpret the table, it can be said that the survey respondents have been asked to rate their agreement with the statement “Firm is bureaucratic nightmare”. The table presents the frequency of responses for each rating category, as well as the total number of respondents and the mean and standard deviation of the responses.

The data shows that 71, (41.76%) respondents have considered ‘Firm is bureaucratic nightmare’, extremely important (rating of 5), and 24.11% (41 respondents) found it important (rating of 4). A smaller proportion, 28.23%, viewed it moderately important (rating of 3), while 5.29% rated it as slightly important (rating of 2), and 0.59% saw it, not at all Important (rating of 1).

With a mean score of 4.011765, the overall sentiment leaned toward considering ‘Firm is bureaucratic nightmare’ as important. The standard deviation of 0.985025 indicated moderate variability in responses, suggesting some variation in the importance placed on this factor across the respondents. The data highlighted a strong preference for ‘Firm is bureaucratic nightmare’, but with a notable minority that places lower importance to it.

Pie Chart 3.41

Pie Chart showing Firm is bureaucratic nightmare.



Supports Development of Ideas

The table presents the distribution of responses to the statement “Supports Development of Ideas” on a Likert scale. The frequencies of each response category are provided, along with the total number of responses, the mean score, and the standard deviation.

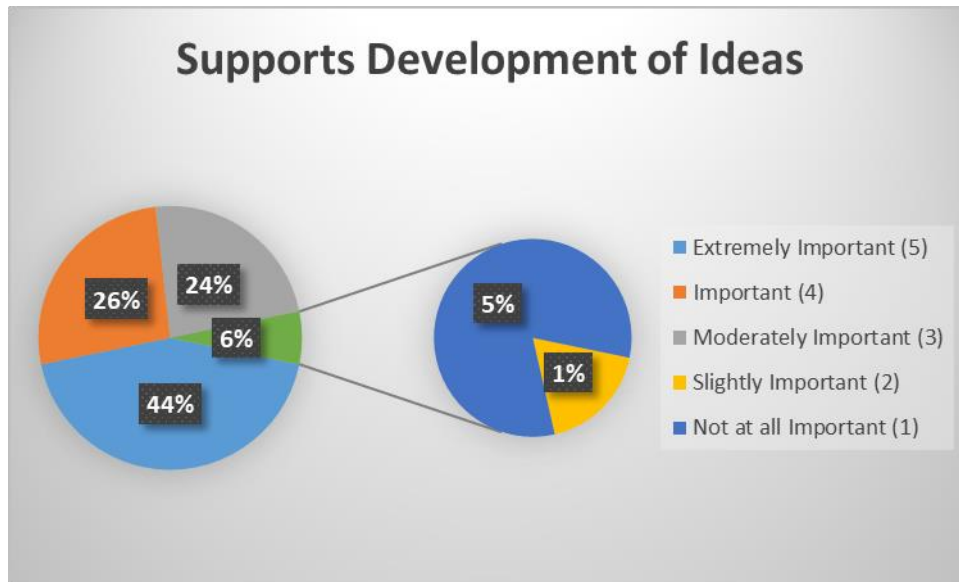
The data shows that 74, (43.52%) respondents have considered ‘Supports development of ideas’, extremely important (rating of 5), and 26.47% (45 respondents) found it important (rating of 4). A smaller proportion, 23.52%, viewed it moderately important (rating of 3), while 1.17% rated it as slightly important (rating of 2), and 5.29% saw it, not at all Important (rating of 1).

With a mean score of 4.017647, the overall sentiment leaned toward considering ‘Supports development of ideas’ as important. The standard deviation of 1.095842 indicated moderate variability in responses, suggesting some variation in the importance placed on this factor across

the respondents. The data highlighted a strong preference for ‘Supports development of ideas’, but with a notable minority that places lower importance to it.

Pie Chart 3.42

Pie Chart showing Supports development of ideas



Do not share knowledge

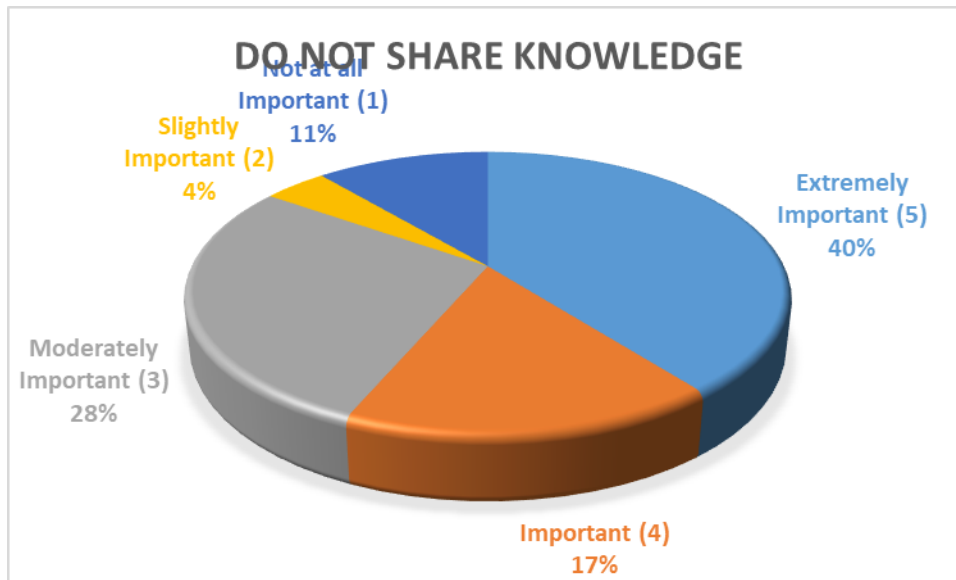
The table presents responses to a survey regarding the attitude towards knowledge sharing, with participants indicating their level of agreement on a 5-point Likert scale.

The data shows that 67, (439.41%) respondents considered ‘Do not Share Knowledge’, extremely important (rating of 5), and 17.05% (29 respondents) found it important (rating of 4), while 4.11% rated it as slightly important (rating of 2), and 11.17% saw it, not at all Important (rating of 1).

With a mean score of 3.684118, the overall sentiment has not leaned toward considering ‘Do not share knowledge’ as important. The standard deviation of 1.328108 indicated moderate variability in responses, suggesting some variation in the importance placed on this factor across the respondents. The data highlighted a strong preference for ‘Do not Share Knowledge’, but with a notable minority that places lower importance to it.

Pie Chart 3.43

Pie Chart showing Do not share knowledge.



Research and Development expenses consist of the following categories and subcategories.

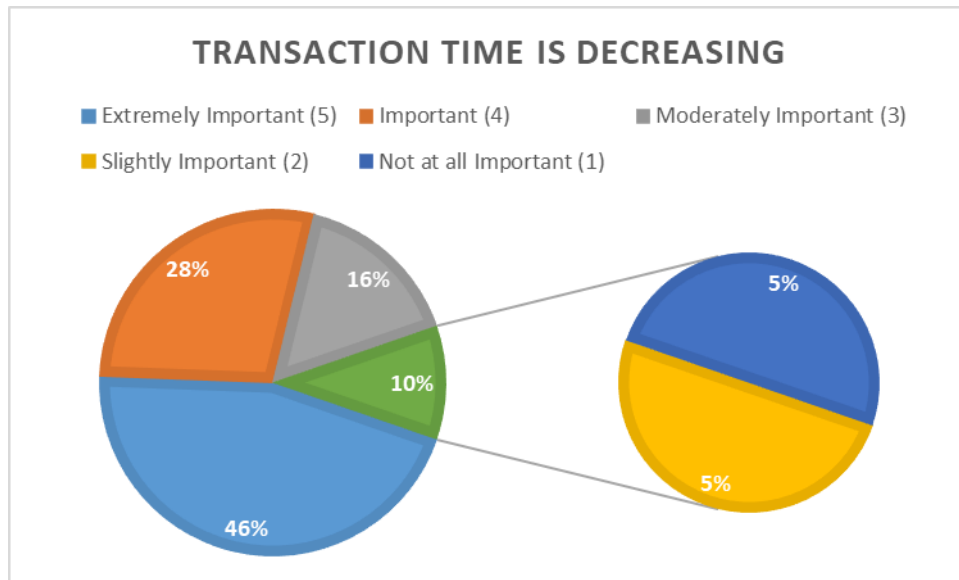
Transaction Time is Decreasing

The data shows that 77, (45.29%) respondents considered ‘Transaction Time is Decreasing’, extremely important (rating of 5), and 28.24% (48 respondents) found it important (rating of 4), a smaller portion with 27 respondents found it moderately important, while 5.29% rated it as slightly important (rating of 2), and 5.29% saw it, not at all Important (rating of 1).

With a mean score of 4.029412, the overall sentiment has not leaned toward considering ‘Transaction time is decreasing’ as important. The standard deviation of 1.143163 indicated moderate variability in responses, suggesting some variation in the importance placed on this factor across the respondents. The data highlighted a strong preference for ‘Transaction Time is Decreasing’, but with a notable minority that places lower importance to it.

Pie Chart 3.44

Pie Chart showing Transaction time is decreasing.



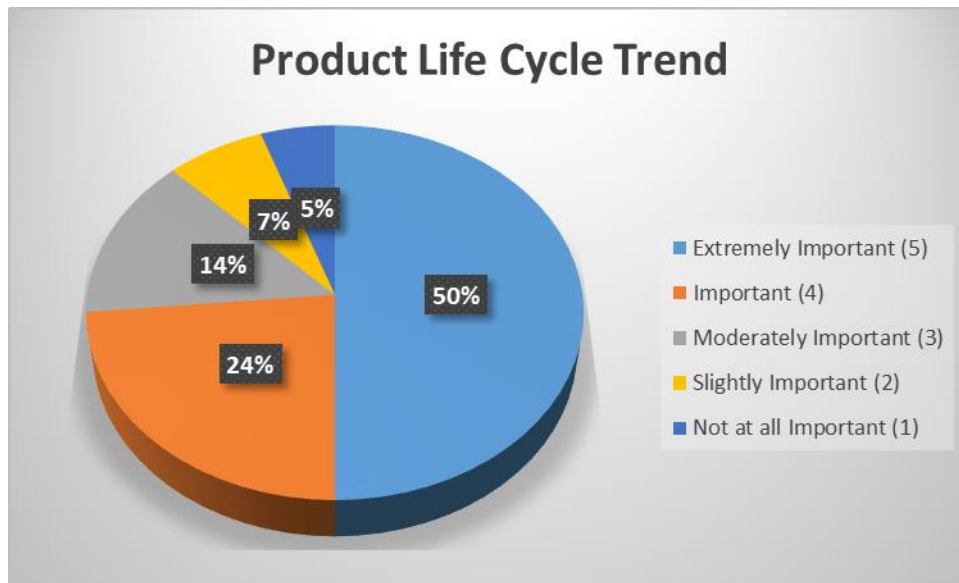
Product life cycle trend

The data shows that 85, (50%) respondents considered 'Product Life Cycle Trend', extremely important (rating of 5), and 23.53% (40 respondents) found it important (rating of 4), a smaller portion with 24 respondents found it moderately important, while 7.06% rated it as slightly important (rating of 2), and 5.29% saw it, not at all Important (rating of 1).

With a mean score of 4.058824, the overall sentiment has not leaned toward considering 'Product Life Cycle Trend' as important. The standard deviation of 1.185244 indicated moderate variability in responses, suggesting some variation in the importance placed on this factor across the respondents. The data highlighted a strong preference for 'Product Life Cycle Trend', but with a notable minority that places lower importance to it.

Pie Chart 3.45

Pie Chart showing Product life cycle trend



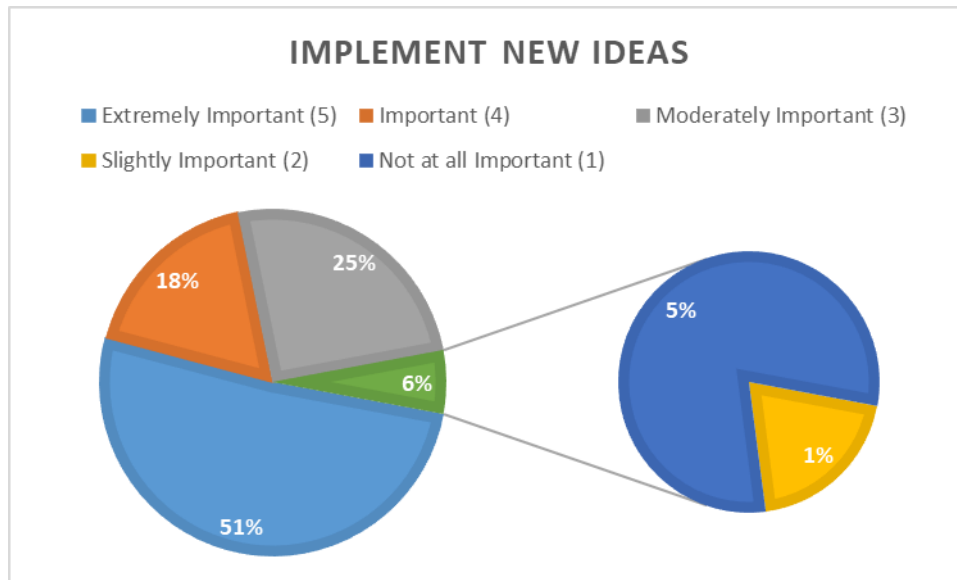
Implement New Ideas:

The data shows that 87, (51.18%) respondents considered 'Implement New Ideas', extremely important (rating of 5), and 17.65% (30 respondents) found it important (rating of 4), a smaller portion with 43 respondents found it moderately important, while 1.18% rated it as slightly important (rating of 2), and 4.71% saw it, not at all Important (rating of 1).

With a mean score of 4.094118, the overall sentiment has not leaned toward considering 'Implement New Ideas' as important. The standard deviation of 1.110717 indicated moderate variability in responses, suggesting some variation in the importance placed on this factor across the respondents. The data highlighted a strong preference for 'Implement New Ideas', but with a notable minority that places lower importance to it.

Pie Chart 3.46

Pie Chart showing Implement new ideas.



Improving Cost Per Revenue

The provided table presents responses regarding the perception that research and development always strive for improving cost per revenue which assessed through a 5-point Likert scale

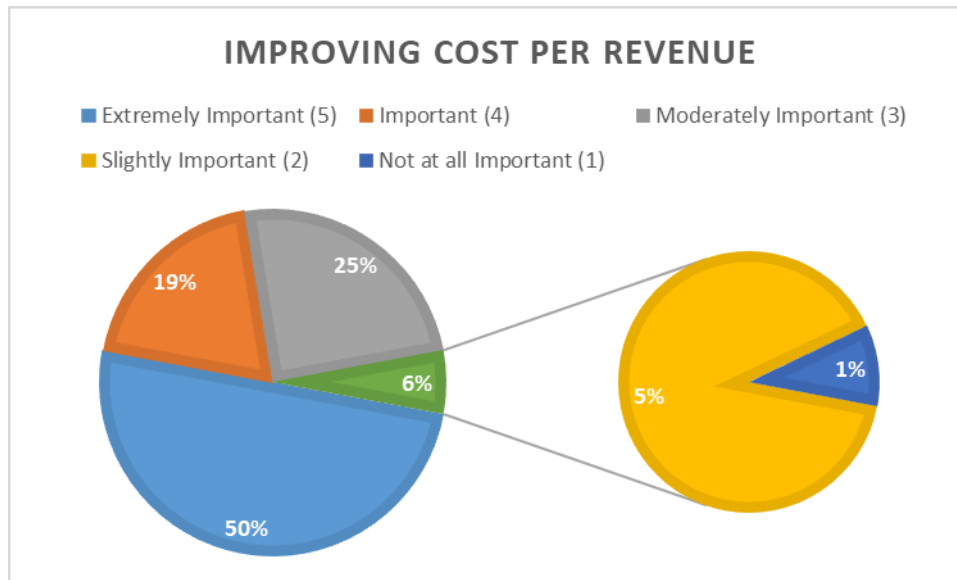
The data shows that 85, (50%) respondents considered 'Improving cost per revenue', extremely important (rating of 5), and 19.41% (33 respondents) found it important (rating of 4), a smaller portion with 42 respondents found it moderately important, while 5.29% rated it as slightly important (rating of 2), and 0.59% saw it, not at all Important (rating of 1).

With a mean score of 4.129412, the overall sentiment has not leaned toward considering 'Improving cost per revenue' as important. The standard deviation of 1.000452 indicated moderate variability in responses, suggesting some variation in the importance placed on this factor across the respondents. Overall, the data highlighted a strong preference for 'Improving cost per revenue', but with a notable minority that places lower importance on it.

In summary, the analysis underscores a prevailing belief among respondents in the improving cost per revenue, with a significant majority expressing agreement or strong agreement.

Pie Chart 3.47

Pie Chart showing Improving cost per revenue



Research and Development invested in product design

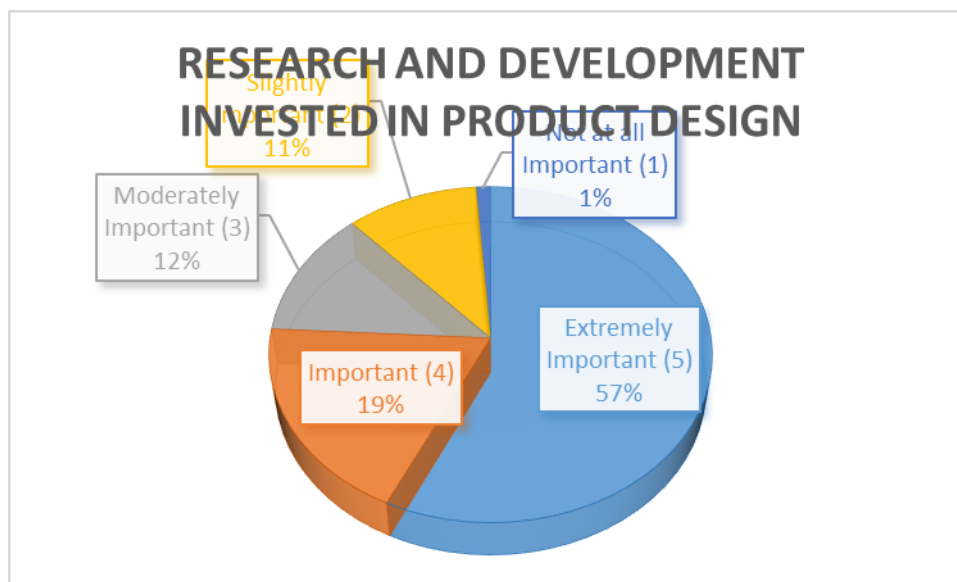
The provided table delineates responses concerning the allocation of Research and Development (R&D) resources towards product design, evaluated using a 5-point Likert scale.

The data shows that 97, (57.06%) respondents considered 'Research and Development invested in product design', extremely important (rating of 5), and 18.82% (32 respondents) found it important (rating of 4), a smaller portion with 21 respondents found it moderately important, while 10.59% rated it as slightly important (rating of 2), and 1.18% saw it, not at all Important (rating of 1).

With a mean score of 4.2, the overall sentiment has not leaned toward considering 'Research and Development invested in product design' as important. The standard deviation of 1.091115 indicated moderate variability in responses, suggesting some variation in the importance placed on this factor across the respondents. The data highlighted a strong preference for 'Research and Development invested in product design', but with a notable minority that places lower importance to it.

Pie Char 3.48

Pie Chart showing Research and Development invested in product design.



The responses indicated that respondents perceived the firm’s structural capital positively, with moderate to high levels of agreement on various aspects, although there has been some diversity in opinions across different statements.

The respondents’ perceptions indicate generally positive evaluations for most criteria, with means above 4.0 indicating agreement with the statements. There has been some variability in opinions as indicated by the standard deviations, particularly for criteria related to Administrative Expenses. The average mean for all criteria is approximately 4.05, suggesting an overall positive perception of the firm’s performance in administrative expenses, showing all the variables under structural capital has been with mean around 4, evidencing that respondents give less importance to structural capital variable for measuring Intellectual Capital compared to human capital.

RELATIONAL CAPITAL

The below table represents the respondent’s response for Relational capital on a five point Likert scale from strongly disagree to strongly agree.

Table: 3.41**Table showing Response of respondents towards Relational Capital**

Particulars	Extremely Important (5)	Important (4)	Moderately Important (3)	Slightly Important (2)	Not at all Important (1)	Total	Mean	Standard Deviation
Advertising and Sales promotion consist of the following categories and subcategories.								
Customers are generally satisfied	85 (50%)	61 (35.88%)	6 (3.52%)	17(10%)	1 (0.58%)	170	4.047619	1.202839
Firm is market-oriented	66 (38.82%)	70 (41.17%)	24 (14.11%)	8 (4.7%)	2 (1.17%)	170	3.922619	1.13199
Reduce time to resolve problem	78 (45.88%)	62 (36.47%)	20 (11.76%)	2 (1.176%)	8 (4.7%)	170	3.988095	1.228348
Longevity of relationships	104 (61.17%)	31 (18.23%)	26 (15.29%)	0	9 (5.29%)	170	4.095238	1.295955
Constantly Improves service quality	81 (47.64%)	51 (30%)	28 (16.47%)	10 (5.88%)	0	170	4.011905	1.158091

Customer's satisfaction consist of the following categories and subcategories.								
Value added service	105 (61.76 %)	50 (29.41 %)	6 (3.52 %)	1 (0.58 %)	8 (4.7%)	17 0	4.2321 43	1.2282 76
Launch products that consumers don't desire	51 (30%)	19 (11.17 %)	41 (24.11 %)	24 (14.11 %)	35 (20.58 %)	17 0	3.0416 67	1.5490 16
Customers are loyal	95 (55.88 %)	38 (22.35 %)	26 (15.29 %)	3 (1.764 %)	8 (4.7%)	17 0	4.0416 67	1.2872 2
Feedback from customer	90 (52.94 %)	57 (33.52 %)	15 (8.823 %)	0	8 (4.7%)	17 0	4.1190 48	1.2225 89
Don't care what customer want	63 (37.05 %)	61 (35.88 %)	23 (13.52 %)	12 (7.05 %)	11 (6.47 %)	17 0	3.7321 43	1.3244 51

Source: Author's Calculation

Detailed interpretation of all the responses collected has been shown as under:

Customers are Generally Satisfied

The provided table delineates responses concerning the allocation of Customers are Generally Satisfied, evaluated using a 5-point Likert scale.

The data shows that 85, (50%) respondents considered 'Customers are Generally Satisfied', extremely important (rating of 5), and 35.88% (61 respondents) found it important (rating of 4), a smaller portion with 6 respondents found it moderately important, while 10% rated it as slightly important (rating of 2), and 0.59% saw it, not at all Important (rating of 1).

With a mean score of 4.047619, the overall sentiment has not leaned toward considering ‘Customers are Generally Satisfied’ as important. The standard deviation of 1.202839 indicated moderate variability in responses, suggesting some variation in the importance placed on this factor across the respondents. The data highlighted a strong preference for ‘Customers are Generally Satisfied’, but with a notable minority that places lower importance to it.

The same is presented below in the graph 3.49

Graph 3.49

Graph showing responses for Customers are generally satisfied.



Firm is Market-Oriented

The provided table delineates responses concerning the allocation of ‘Firm is Market-Oriented’, evaluated using a 5-point Likert scale.

The data shows that 66, (38.82%) respondents considered ‘Firm is Market-Oriented’, extremely important (rating of 5), and 41.17% (70 respondents) found it important (rating of 4), a smaller portion with 24 respondents found it moderately important, while 4.7% rated it as slightly important (rating of 2), and 01.17% saw it, not at all Important (rating of 1).

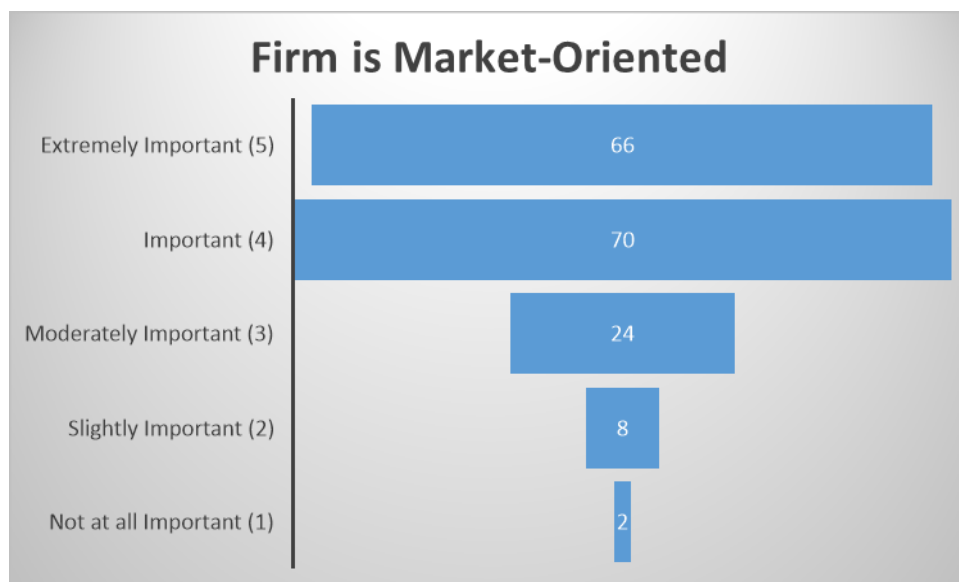
With a mean score of 3.922619, the overall sentiment has not leaned toward considering ‘Firm is Market-Oriented’ as important. The standard deviation of 1.13199 indicated moderate variability in responses, suggesting some variation in the importance placed on this factor

across the respondents. The data highlighted a strong preference for ‘Firm is Market-Oriented’, but with a notable minority that places lower importance to it.

The same is presented below in the graph 3.50

Graph 3.50

Graph showing responses towards Firm is Market Oriented



Reduce Time to Resolve Problem

The provided table delineates responses concerning the allocation of ‘Reduce Time to Resolve Problem’, evaluated using a 5-point Likert scale.

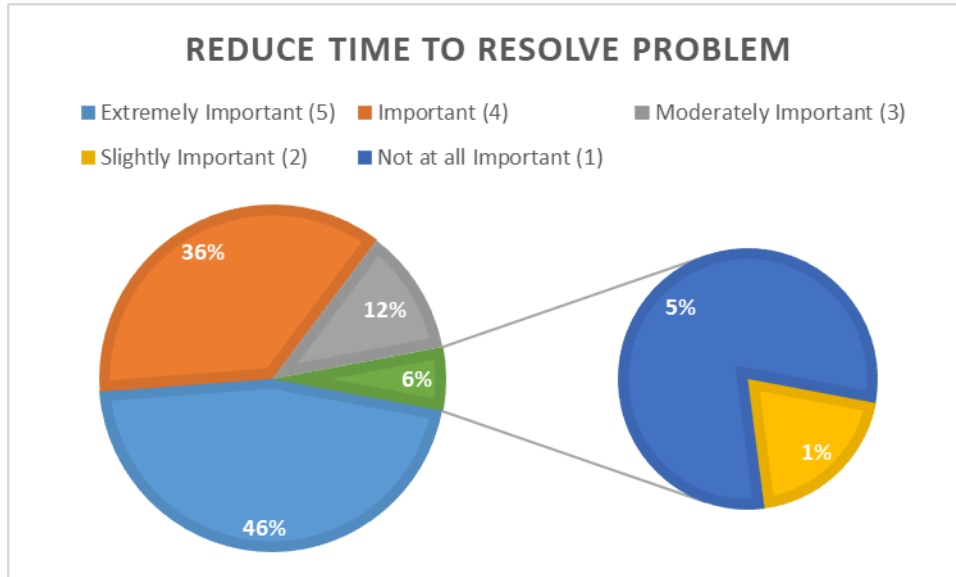
The data shows that 78, (45.88%) respondents considered ‘Reduce Time to Resolve Problem’, extremely important (rating of 5), and 36.47% (62 respondents) found it important (rating of 4), a smaller portion with 20 respondents found it moderately important, while 1.176% rated it as slightly important (rating of 2), and 4.7% saw it, not at all Important (rating of 1).

With a mean score of 3.988095, the overall sentiment has not leaned toward considering ‘Reduce Time to Resolve Problem’ as important. The standard deviation of 1.295955 indicated moderate variability in responses, suggesting some variation in the importance placed on this factor across the respondents. The data highlighted a strong preference for ‘Reduce Time to Resolve Problem’, but with a notable minority that places lower importance to it.

The same is presented below in the graph 3.51

Pie Chart 3.51

Pie Chart showing responses towards Reduce time to resolve problem



Longevity of Relationships

The provided table delineates responses concerning the allocation of 'Longevity of Relationships', evaluated using a 5-point Likert scale.

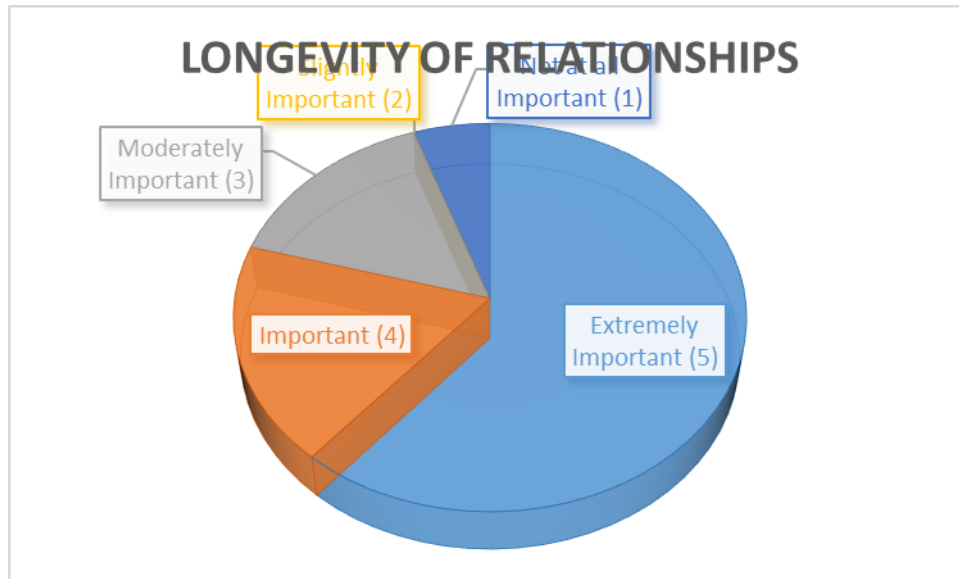
The data shows that 104, (61.17%) respondents considered 'Longevity of Relationships', extremely important (rating of 5), and 18.23% (31 respondents) found it important (rating of 4), a smaller portion with 26 respondents found it moderately important, while 0% rated it as slightly important (rating of 2), and 5.29% saw it, not at all Important (rating of 1).

With a mean score of 4.095238, the overall sentiment has not leaned toward considering 'Longevity of Relationships' as important. The standard deviation of 1.295955 indicated moderate variability in responses, suggesting some variation in the importance placed on this factor across the respondents. The data highlighted a strong preference for 'Longevity of Relationships' but with a notable minority that places lower importance to it.

The same is presented below in the graph 3.52

Pie Chart 3.52

Pie Chart showing responses towards Longevity of relationships



Use what Customers Want to Make Money

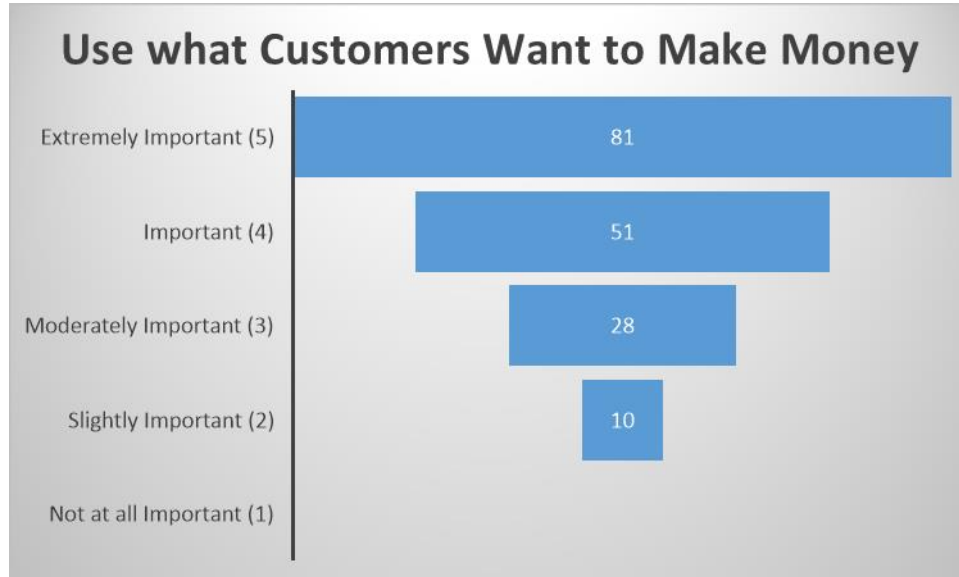
The provided table delineates responses concerning the allocation of ‘Use what Customers Want to Make Money’, evaluated using a 5-point Likert scale.

The data shows that 81, (47.64%) respondents considered ‘Use what Customers Want to Make Money’, extremely important (rating of 5), and 30% (51 respondents) found it important (rating of 4), a smaller portion with 28 respondents found it moderately important, while 10% rated it as slightly important (rating of 2), and 0% saw it, not at all Important (rating of 1).

With a mean score of 4.011905, the overall sentiment has not leaned toward considering ‘Use what Customers Want to Make Money’ as important. The standard deviation of 1.158091 indicated moderate variability in responses, suggesting some variation in the importance placed on this factor across the respondents. The data highlighted a strong preference for ‘Use what Customers Want to Make Money’ but with a notable minority that places lower importance to it. The same is presented below in the graph 3.53

Graph 3.53

Graph showing responses towards Use what customers want to make money.



Customer's satisfaction consists of the following categories and subcategories

Value Added Service

The provided table delineates responses concerning the allocation of 'Value Added Service', evaluated using a 5-point Likert scale.

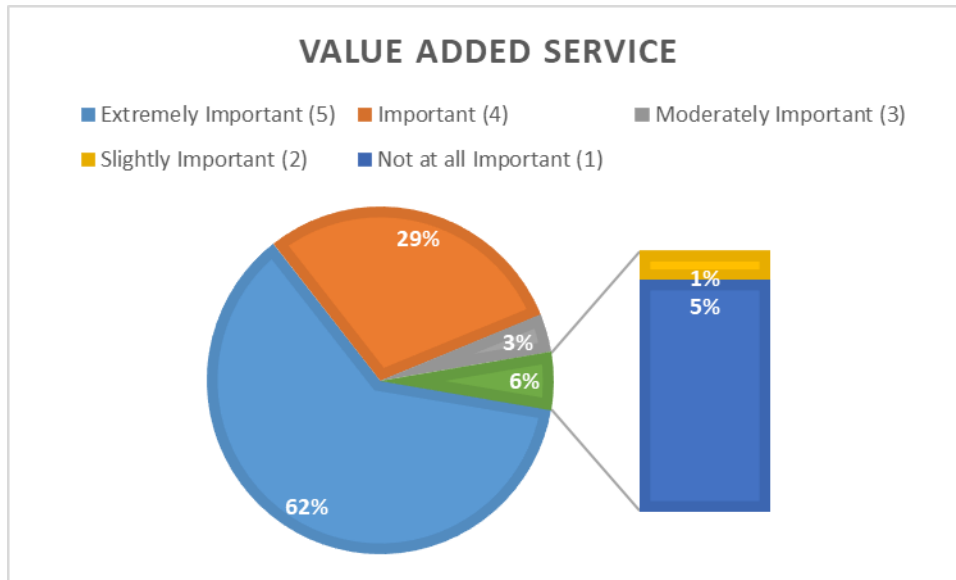
The data shows that 105, (61.76%) respondents considered 'Value Added Service', extremely important (rating of 5), and 29.41% (50 respondents) found it important (rating of 4), a smaller portion with 6 respondents found it moderately important, while 0.59% rated it as slightly important (rating of 2), and 4.7% saw it, not at all Important (rating of 1).

With a mean score of 4.011905, the overall sentiment has not leaned toward considering 'Value Added Service' as important. The standard deviation of 1.228276 indicated moderate variability in responses, suggesting some variation in the importance placed on this factor across the respondents. The data highlighted a strong preference for 'Value Added Service' but with a notable minority that places lower importance to it.

The same is presented below in the graph 3.54

Pie Chart 3.54

Pie Chart showing responses towards Value Added service



Launch Products that Consumers Don't Desire

The provided table delineates responses concerning the allocation of 'Launch Products that Consumers Don't Desire', evaluated using a 5-point Likert scale.

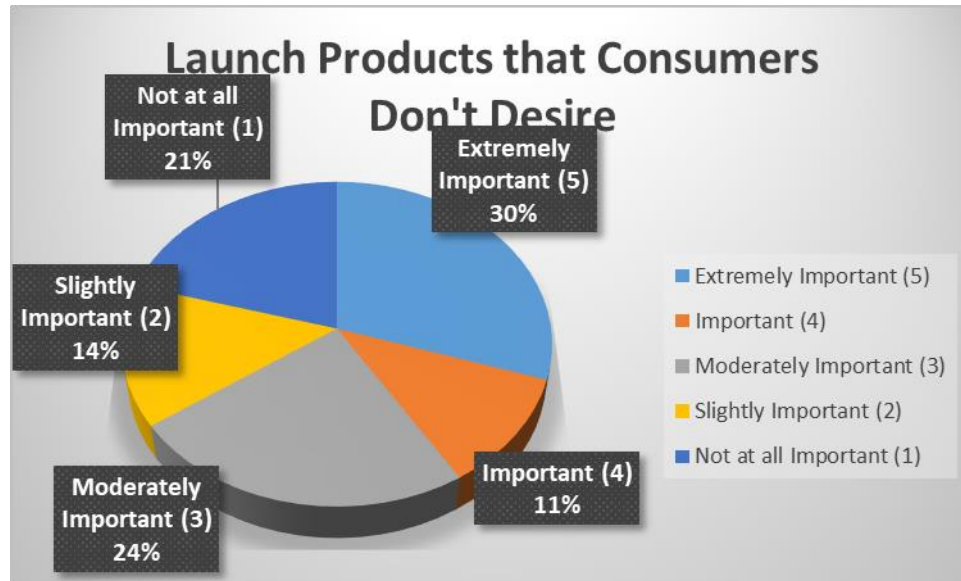
The data shows that 51, (30%) respondents considered 'Launch Products that Consumers Don't Desire', extremely important (rating of 5), and 11.17% (19 respondents) found it important (rating of 4), a significant portion with 41 respondents found it moderately important, while 14.11% rated it as slightly important (rating of 2), and 20.58% saw it, not at all Important (rating of 1).

With a mean score of 3.041667, the overall sentiment has not leaned toward considering 'Launch Products that Consumers Don't Desire' as important. The standard deviation of 1.549016 indicated moderate variability in responses, suggesting some variation in the importance placed on this factor across the respondents. The data highlighted a strong preference for 'Launch Products that Consumers Don't Desire' but with a notable minority that places lower importance to it.

The same is presented below in the graph 3.55

Pie Chart 3.55

Pie Chart showing responses towards Launch products that consumers don't desire.



Customers are loyal

The provided table delineates responses concerning the allocation of 'Customers are loyal', evaluated using a 5-point Likert scale.

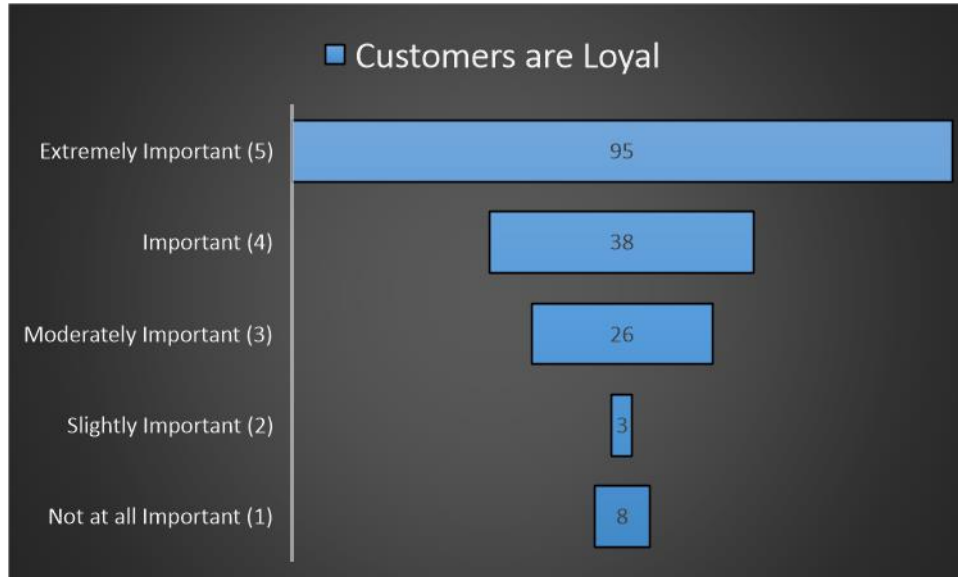
The data shows that 95, (55.88%) respondents considered 'Customers are loyal', extremely important (rating of 5), and 22.35% (38 respondents) found it important (rating of 4), a significant portion with 26 respondents found it moderately important, while 1.76% rated it as slightly important (rating of 2), and 4.7% saw it, not at all Important (rating of 1).

With a mean score of 4.041667, the overall sentiment has not leaned toward considering 'Customers are loyal' as important. The standard deviation of 1.28722 indicated moderate variability in responses, suggesting some variation in the importance placed on this factor across the respondents. The data highlighted a strong preference for 'Customers are loyal' but with a notable minority that places lower importance to it.

The same is presented below in the graph 3.56

Graph 3.56

Graph showing responses towards Customers are loyal.



Feedback from Customer

The provided table delineates responses concerning the allocation of 'Feedback from Customer', evaluated using a 5-point Likert scale.

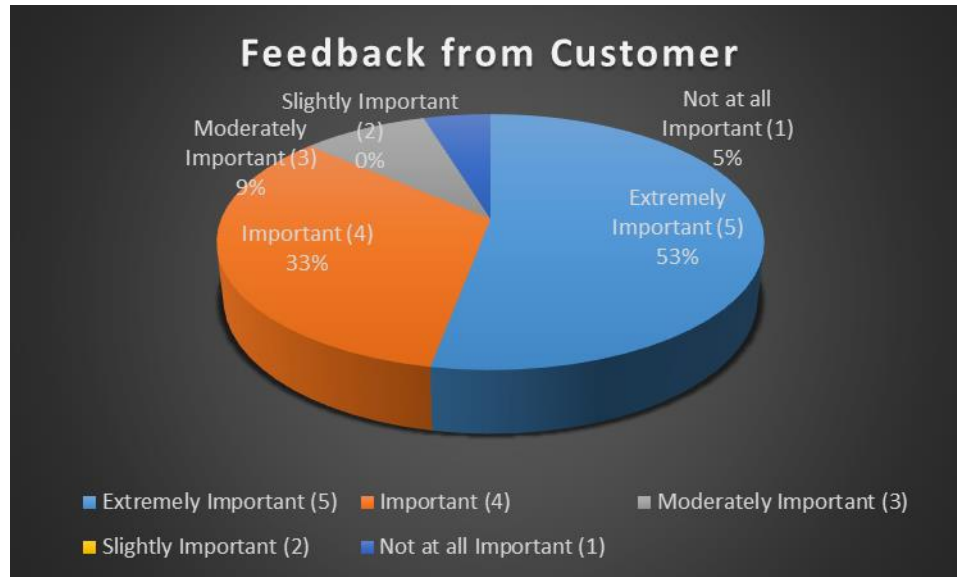
The data shows that 90, (52.94%) respondents considered 'Feedback from Customer', extremely important (rating of 5), and 33.52% (57 respondents) found it important (rating of 4), a significant portion with 15 respondents found it moderately important, while 0% rated it as slightly important (rating of 2), and 4.7% saw it, not at all Important (rating of 1).

With a mean score of 4.119048, the overall sentiment has not leaned toward considering 'Feedback from Customer' as important. The standard deviation of 1.222589 indicated moderate variability in responses, suggesting some variation in the importance placed on this factor across the respondents. The data highlighted a strong preference for 'Feedback from Customer' but with a notable minority that places lower importance to it.

The same is presented below in the graph 3.57

Pie Chart 3.57

Pie Chart showing responses of Feedback from Customer.



Don't Care What Customers Want

The provided table delineates responses concerning the allocation of 'Don't Care What Customers Want', evaluated using a 5-point Likert scale.

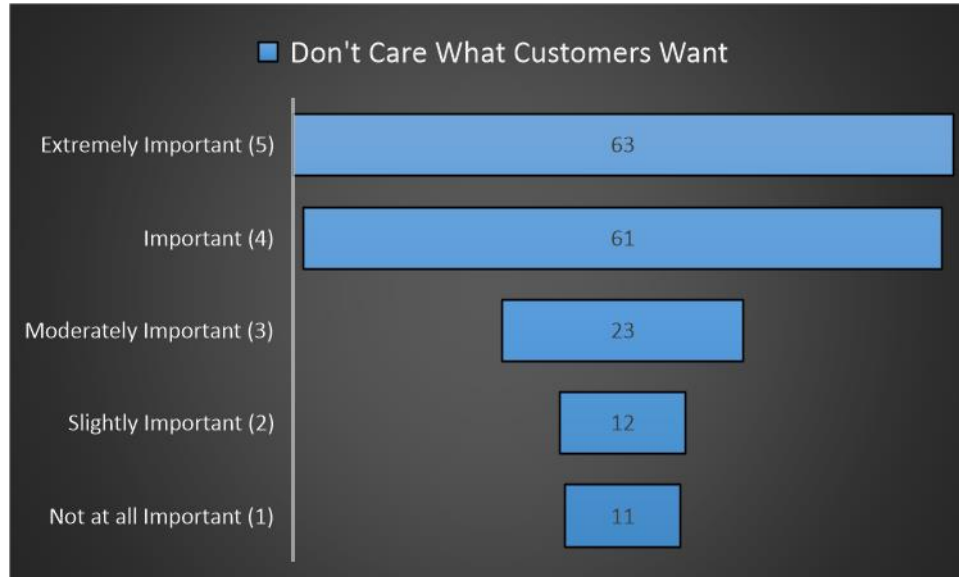
The data shows that 63, (37.05%) respondents considered 'Don't Care What Customers Want', extremely important (rating of 5), and 335.88% (61 respondents) found it important (rating of 4), a significant portion with 23 respondents found it moderately important, while 0% rated it as slightly important (rating of 2), and 4.7% saw it, not at all Important (rating of 1).

With a mean score of 3.732143, the overall sentiment has not leaned toward considering 'Don't Care What Customers Want' as important. The standard deviation of 1.222589 indicated moderate variability in responses, suggesting some variation in the importance placed on this factor across the respondents. The data highlighted a strong preference for 'Don't Care What Customers Want' but with a notable minority that places lower importance to it.

The same is presented below in the graph 3.58

Graph 3.58

Graph showing responses towards Don't care what customers want.



3.8.3.5 Factor Analysis

Factor Analysis condenses extensive variables into subsets known as factors. It is intended for interval data yet applies to ordinal data and is frequently employed for data reduction and structural insights. Excessive independent variables in predicting responses yield challenges, like prolonged data collection, costs, inference complexity, and redundancy. Factor Analysis addresses this, grouping input variables into underlying factors. The count of theoretical factors matches the input variables, whereas, insignificant factors can be discarded based on predetermined criteria, reducing total factors.

This study uses Principal component analysis which provides ‘unique solution,’ to reconstruct data from the results. It considers ‘total’ variance from the variables, to include factors in quantification process. This method has been used to investigate the reasons for considering the specific items in deriving new methods.

Factors loading has been used to measure correlation between criteria and the factors. A factor loading close to 1 indicates a strong correlation between a criteria and factors, while a loading closer to zero indicates weak correlation. The factors are rotated with the use of Varimax with Kaiser Normalisation rotation method. Factors have been extracted using Principal Component

Analysis (PCA) method and only those factors have been considered for interpretation, if the values are greater than 0.7.

Factor Analysis: Reasons for adopting variable for measuring

Intellectual Capital

Through KMO and Bartlett's Test

Table 3.42

Table showing KMO and Bartlett's Test results

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.801
Bartlett's Test of Sphericity	Approx. Chi-Square	10153.961976
	Df	561
	Sig.	.000

Interpretation: In case of the reasons for using variables in the methods of measuring Intellectual Capital, the results have shown that the KMO measure of sampling adequacy has been 0.819, which indicated that the present data has been suitable for Factor Analysis. Similarly, Bartlett's Test of Sphericity (.000) has been significant ($p < .05$), indicating sufficient correlation exists between the criteria to proceed with the Factor Analysis.

Table 3.42 presents an analysis of the total variance explained through Principal Component Analysis (PCA). PCA is a statistical technique used to reduce the dimensionality of data while preserving as much variance as possible. In this analysis, the eigenvalues have been examined, the sum of squared loadings during extraction, and the sum of squared loadings after rotation for each component have been noted.

Table 3.43

Table showing Total Variance explained

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	21.819	64.174	64.174	21.819	64.174	64.174	10.879	31.997	31.997
2	2.902	8.536	72.710	2.902	8.536	72.710	8.834	25.982	57.979
3	1.512	4.448	77.158	1.512	4.448	77.158	4.620	13.587	71.566
4	1.256	3.694	80.852	1.256	3.694	80.852	3.157	9.286	80.852

5	.898	2.643	83.495					
6	.808	2.378	85.872					
7	.569	1.673	87.545					
8	.505	1.486	89.032					
9	.477	1.403	90.435					
10	.429	1.261	91.695					
11	.406	1.193	92.888					
12	.343	1.008	93.896					
13	.283	.834	94.730					
14	.269	.793	95.523					
15	.250	.736	96.259					
16	.185	.545	96.804					
17	.173	.509	97.314					
18	.164	.483	97.797					
19	.125	.367	98.164					
20	.097	.284	98.448					
21	.091	.269	98.716					
22	.069	.203	98.919					
23	.065	.191	99.111					
24	.060	.176	99.286					
25	.050	.148	99.434					
26	.042	.124	99.558					
27	.036	.107	99.665					
28	.033	.098	99.763					
29	.023	.068	99.830					
30	.019	.057	99.887					
31	.018	.052	99.939					
32	.013	.039	99.978					
33	.005	.014	99.992					
34	.003	.008	100.000					

Extraction Method: Principal Component Analysis.

The Principal Component Analysis (PCA) is a statistical procedure that reduces the dimensionality of a dataset while retaining most of the variance. The table shows the variance explained by the principal components before and after rotation. The first component, with an eigenvalue of 21.819, explains 64.174% of the total variance. Component 2 explains 8.536%, and the cumulative variance explained is 72.710%. The rotation sum of squared loadings show that component 1 explains 31.997% of the variance, while component 2 explains 25.982%. The cumulative variance shows that the first four components explain 80.852% of the total variance. Retaining these components for further analysis is reasonable.

The initial eigenvalues represent the variance associated with each component before any extraction or rotation.

Component 1 has an eigenvalue of 21.819, explaining 64.174% of the total variance. This indicates that this component alone captures a substantial portion of the overall variance.

Component 2 has an eigenvalue of 2.902, explaining 8.536% of the total variance. Together with the first component, the cumulative variance explained is 72.710%.

Subsequent components explain decreasing amounts of variance, with the cumulative variance explained increasing incrementally.

During the extraction process, the variance explained by each component is reevaluated. Component 1 retains its high explanatory power, explaining 64.174% of the variance. Component 2 explains an additional 8.536% of the variance, resulting in a cumulative variance of 72.710%. Components 3 and 4 continued to contribute to the cumulative variance, explaining 4.448% and 3.694% of the variance, respectively resulting in a cumulative variance of 80.852% which suggests that these four components capture much of the information in the original dataset.

Rotation is applied to make the interpretation of components easier by redistributing the variance among the components.

Component 1 after rotation explains 31.997% of the variance, while Component 2 explains 25.982%. This redistribution typically results in a more balanced variance explanation across the components.

As it progresses through the remaining components, their contributions to cumulative variance decrease significantly, with later components explaining little variance. After considering all 34 components, the cumulative variance reaches 100.000%, indicating that the data has been entirely accounted for by these components.

This table provides a detailed breakdown of the variance explained by each component in the PCA analysis, both before and after extraction and rotation, illustrating the diminishing contributions of subsequent components to the cumulative variance.

Graph: 3.59

Graph showing Scree Plot of Principal Component Analysis

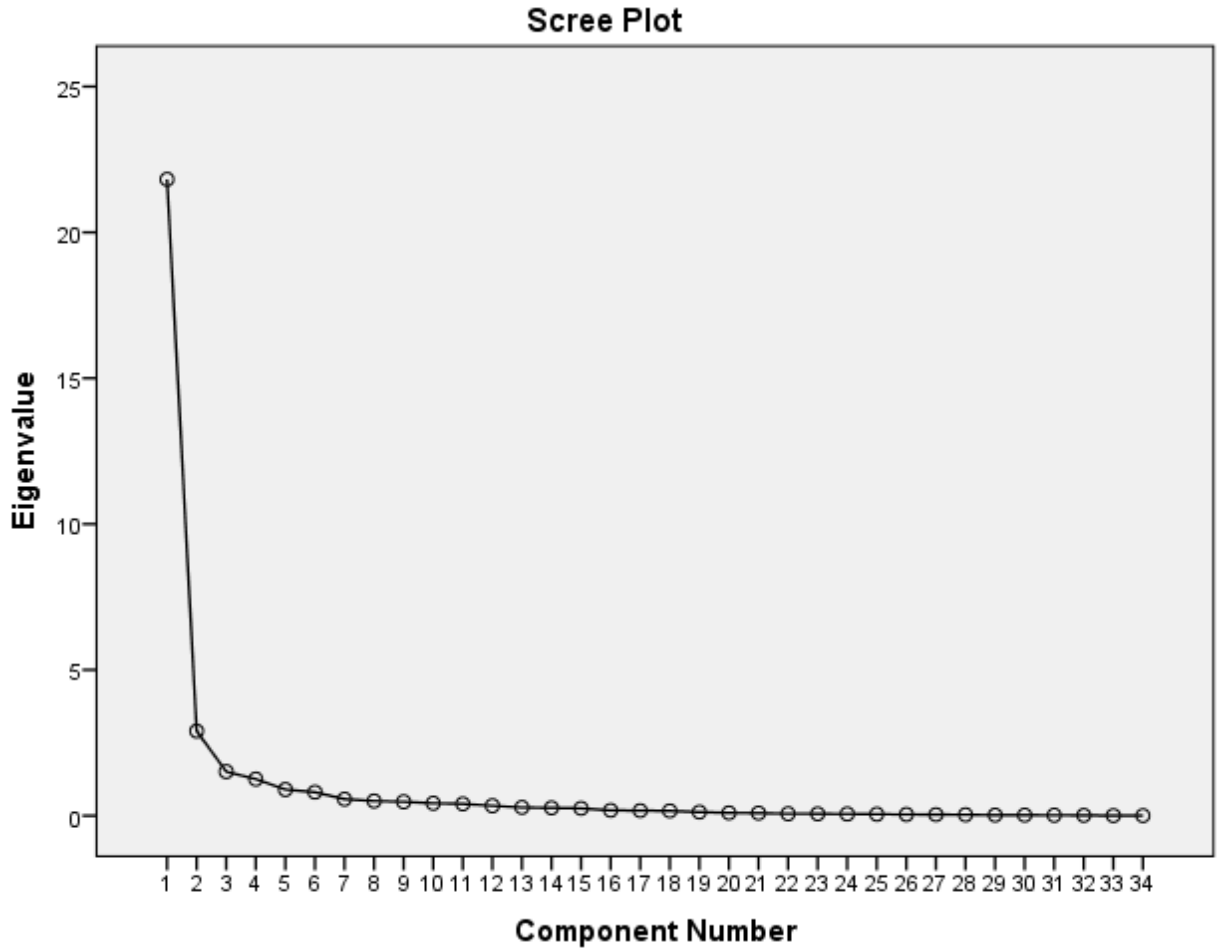


Table 3.44 provides a comprehensive examination of the total variance associated with factors influencing the consideration of variables in the methodology for measuring Intellectual Capital (IC). The table employs Principal Component Analysis (PCA) to evaluate the variances across multiple components, each representing a set of variables or factors related to IC measurement.

Table 3.44

Table showing Total Variance for variables to be considered in the method for measuring Intellectual capital

Com pone nt	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	21.819	64.174	64.174	21.819	64.174	64.174	10.879	31.997	31.997
2	2.902	8.536	72.710	2.902	8.536	72.710	8.834	25.982	57.979
3	1.512	4.448	77.158	1.512	4.448	77.158	4.620	13.587	71.566
4	1.256	3.694	80.852	1.256	3.694	80.852	3.157	9.286	80.852

Extraction Method: Principal Component Analysis

The first four components (factors) in the initial solution have Eigenvalues over 1 and it has accounted for more than 80% of the observed variations that becomes the reason for considering it in the valuation of intellectual capital. According to Kaiser Criterion, only the first four factors should be used due to its Eigenvalues are all more than one.

Table 3.45 presents an in-depth analysis of communalities and the rotated component matrix pertaining to organizations' rationales for incorporating variables into the measurement of Intellectual Capital (IC). The table employs Principal Component Analysis (PCA) with a Varimax rotation and Kaiser Normalization to elucidate the underlying structure of the variables and their communalities.

Table 3.45: Rotated Component Matrix

Table showing Communalities and Rotated Component Matrix of Organizations' for measuring Intellectual Capital

Rotated Component Matrix^a				
	Component			
	1	2	3	4
Managers help employees in solving official problems	.882			
Employees skills are upgraded	.855			
Employees are motivated to share new and innovative ideas	.835			
Management is supportive to innovations	.804	.430		
Managers Make sure that employees are happy	.772			
Managers understand all factors of employee satisfaction	.765			
Engage more ideas in industry	.754			
Feedback from customer	.751			
Value added service	.746	.410		
Employees undergo continuous training	.742			
Leadership skills	.709	.557		
Customers are loyal	.666			

Firm is efficient	.633			.586
Reduce time to resolve problem	.625	.413	.438	
Employees are highly educated	.556			
Customers are generally satisfied		.837		
Research and Development invested in product design		.833		
Systems allow easy information access		.792		
Procedures support innovation		.768		
Transaction time is decreasing		.758		
Staff members are happy to put extra efforts when needed		.748	.402	
Product life cycle trend		.732	.415	
Donot share knowledge		.691		
Increase revenue per employee	.563	.626		
Implement new ideas	.442	.602	.501	
Firm is market oriented	.483	.589	.408	
Firm is bureaucratic nightmare		.429	.759	
Atmosphere is supportive		.497	.670	
Procedures support innovations		.546	.663	

Supports development of ideas	.429	.495	.655	
Longevity of relationships	.599		.628	
Launch products that consumers don't desire				.851
Don't Care what customers want				.745
Use what customers want to make money	.474			.616
Extraction Method: Principal Component Analysis.				
Rotation Method: Varimax with Kaiser Normalization.				
a. Rotation converged in 8 iterations.				

All extracted communalities are deemed acceptable, signifying the suitability of all variables for factor solutions, given their substantial extraction values. Factor loadings gauge the correlation between variables and factors.

The presented table 3.44 elucidates the extent of correlation between diverse variables and four components.

The data provided represents a Rotated Component Matrix resulting from Principal Component Analysis (PCA) with a Varimax rotation and Kaiser normalization method applied. This technique aims to simplify the structure of a dataset by identifying underlying patterns and reducing the dimensionality of the data.

In the matrix, the components (1 through 4) represent latent constructs or factors extracted from the original variables. Each variable is then loaded onto these components, indicating the strength of their relationship. Higher loading values signify a stronger association between the variable and the component.

Component 1 is characterized by variables related to ‘Managers help employees in solving official problems’, ‘Employees skills are upgraded’, ‘Employees are motivated to share new and innovative ideas’, ‘Management is supportive to innovations’, ‘Managers make sure that employees are happy’, ‘Managers understand all factors of employee satisfaction’, ‘Engage more

ideas in industry’, ‘Feedback from customers’, ‘Value added services’, ‘Employees undergo continuous training’, ‘Leadership skills’, ‘Customers are loyal’, ‘Firm is efficient’, ‘Reduced time to resolve problem’, ‘Employees are highly educated’.

Component 2 is associated with variables such as ‘Customers are generally satisfied’, ‘Research and Development invested in product design’, ‘Systems allow easy information access’, ‘Procedures support innovation’, ‘Transaction time is decreasing’, ‘Staff members are happy to put extra efforts when needed’, ‘Product life cycle trend’, ‘Do not share knowledge’, ‘Increase revenue per employee’, ‘Implement new ideas’.

Component 3 is primarily represented by variables concerning ‘Firm is bureaucratic nightmare’, ‘Atmosphere is supportive’, ‘Procedures support innovations’, ‘Supports development of ideas’, ‘Longevity of relationships’.

Component 4 encompasses variables linked to ‘Launch products that consumers don’t desire’, ‘Don’t Care what customers want’, ‘Use what customers want to make money’.

The rotations converged after 8 iterations, indicating stability in the extracted components. This analysis provides insights into the underlying structure of the dataset, facilitating a better understanding of the relationships between various factors within the domain under study.

Table 3.46 presents an analysis of factor loadings for variables related to the measurement of Intellectual Capital (IC). The table employs factor analysis technique to elucidate the underlying structure of the variables and their respective associations with extracted factors. The factors are denoted as Factor 1, Factor 2, Factor 3, and Factor 4, accompanied by the percentage of variance they account for and the variables that load onto each factor.

Table 3.46 – Factor Loading of Variables

Factor	% of Variance	Factor Loading (Variables)
Human Capital	64.174	Variables considering - - Managers Help Employees in Solving Official Problems, - Employees Skills are Upgraded,

		▪ Employees are Motivated to Share New and Innovative Ideas, ▪ Management is Supportive to Innovations, ▪ Managers Make Sure that Employees are Happy, ▪ Managers Understand all Factors of Employee Satisfaction, ▪ Engage More Ideas in Industry, ▪ Feedback from Customer, ▪ Value Added Service, ▪ Employees Undergo Continuous Training, ▪ Leadership Skills, ▪ Customers are Loyal, ▪ Firm is Efficient, ▪ Reduce Time to Resolve Problems, ▪ Employees are Highly Educated In the above all the factors of human capital relating to employees and management have been included in the first component, compelling employee cost and management remuneration and fees should be considered as a variable in quantifying the intellectual capital.
Research and Development	8.536	▪ Customers are generally satisfied, ▪ Research and Development invested in product design, ▪ Systems allow easy information access, ▪ Procedures support innovation, ▪ Transaction time is decreasing, ▪ Staff members are happy to put extra efforts when needed, ▪ Product life cycle trend, ▪ Donot share knowledge, ▪ Increase revenue per employee, ▪ Implement new ideas In the above more factors have been related to the Research and development of the organisation.
Organisational Capital	4.448	▪ Firm is bureaucratic nightmare, ▪ Atmosphere is supportive, ▪ Procedures support innovations, ▪ Supports development of ideas, ▪ Longevity of relationships, In the above, more factors have been related to the administrative capital compelling organisational capital of the firm.

Customer Capital	3.694	▪ Launch products that consumers don't desire, ▪ Don't Care what customers want, ▪ Use what customers want to make money In the above all the factors have been related to the customer capital of the firm.
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Factor 1 is the most dominant, explaining a substantial portion of the variance at 64.174%. These variables collectively represent aspects related to the human capital of the organisation considering human intellect, represented in employees and management. This establishes that employee cost and management remuneration have been considered as an important factor for valuing Intellectual Capital.

Factor 2 accounts for 8.536% of the variance and includes variables such as "Research and Development invested in product design," "Procedures support innovation," "Transaction time is decreasing," "Implement new ideas,". This factor captures aspects related to Research and Development department and Administrative department. Employees contribute to the same department resulting in considering employee expenses for quantifying Intellectual Capital.

Factor 3 explains 4.448% of the variance and is characterized by variables such as "Atmosphere is supportive," "Firm is bureaucratic nightmare," "Supports development of ideas," and "Longevity of relationships." This factor suggests elements related to organizational culture, termed as the organisational capital of the firm. This capital is also developed by employees, and it remains with the firm when employees go home at night or leave the firm. expenses in developing this capital is done for the employees resulting in employee expenses in the quantification of Intellectual Capital.

Factor 4, with a variance of 3.694%, includes variables like "Launch products that consumers do not desire," "Use what customers want to make money" and "don't care what customers want." This factor represents customer-oriented strategies and so, termed as customer capital. These are the factors relating to customers relations that have been developed and maintained by the employees.

The gist of the above discussion is that all the variables relating to structural capital, research and development, customer capital and relational capital are the contribution of employees and management's knowledge, skill, experience and intellect. In this respect, variables relating to human cost including employee expenses and management remuneration have been considered in methods of quantifying intellectual capital.

3.8.3.6. Hypothesis Testing: Chi Square Test

Ho1 = There is no considerable influence of Education (Highest qualification) i.e., graduate, post graduate or Ph.D. on awareness of intangible assets.

The following table presents the summary of education and awareness of intangible assets.

Table 3.47: Case processing summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Graduate * Awareness of Intangible assets	12	8.23%	0	0%	12	8.23%
Postgraduate * Awareness of Intangible assets	116	67.06%	0	0%	116	67.06%
Ph.D. * Awareness of Intangible assets	42	24.71%	0	0%	42	24.71%

The following table presents the information of acceptance of awareness of Intangible assets based on their qualifications.

Table 3.48: Highest qualification * Awareness of Intangible assets Cross

	Awareness of Intangible assets		Total
	Yes	No	
Graduate: Commerce and Management	4	1	5
Graduate: Others	5	2	7
Postgraduate: Commerce and Management	58	28	86
Postgraduate: Others	22	5	27
Post Graduate Diploma	2	1	3
Ph.D.: Commerce and Management	30	1	31
Ph.D.: Others	6	5	11
	127	43	170

Table 3.49 Chi-Square Test

	Value	Df	Asymp. Sig.(2sided)
Pearson Chi-square	13.62963	6	0.034058
N of Valid cases	170		

Explain p-value concept and interpretation:

Postgraduates: Commerce and Management are aware of Intangible assets followed by Ph.D. in the same discipline.

The above table has revealed that Pearson Chi square value is 0.034 which has been less than 0.05. The Chi square value which is less than 0.05 proves that null hypothesis is rejected, there has been no significant influence of highest educational qualification on awareness of Intangible assets.

The above stated value of Chi square test has shown a that there is a considerable influence of educational qualification on awareness of Intangible assets.

Ho2: There is no considerable influence of Professional qualification on awareness of intangible assets.

The following table gives information about professional qualification and awareness of intangible assets.

Table 3.50: Case processing summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
CA	35	19.02 %	0	0	35	19.02 %
CWA	16	8.70 %	0	0	16	8.70 %
CS	9	5.29 %	0	0	9	5.29 %
CFA	11	5.98 %	0	0	11	5.98 %
CMA	00	00	0	0	00	00
LLB	06	3.26%	0	0	06	3.26%
LLM	00	00	0	0	00	00
Others	107	57.75 %	0	0	107	57.75 %
Total	184	100	0	0	184	100

Table 3.51: Professional qualification * Awareness of Intangible assets Cross Tabulations

Count

	Awareness of Intangible assets		Total
	Yes	No	
CA	34	1	35
CWA	10	6	16
CS	9	0	9

CFA	11	0	11
CMA	0	0	0
LLB	2	4	6
LLM	0	0	0
Others	82	25	107
Total	148	36	184

Table 3.52 Chi-Square Test for relating Professional Qualifications on Awareness of Intangible Assets

	Value	Df	Asmp. Sig.(2sided)
Pearson Chi-square	15.024684	7	0.0356843
N of Valid cases	7		
	0.0356843		

Under professional qualifications, Chartered Accountants are aware of Intangible assets followed by Cost and Work accountant and Chartered Financial Analysts.

The above table reveals that Pearson Chi square value is 0.0356 which has been less than 0.05.

The Chi square value which has been more than 0.05, supports rejecting null hypothesis.

The above value of Chi square test has shown that there is a significant influence of professional qualification on awareness of Intangible assets.

Ho3 = There is no considerable influence of the Business profession on awareness of intangible assets.

Table 3.53 Case processing summary of Business Profession

	Cases					
	Valid		Missing		Total	
Self Employed Professionals	26	15.29%	0	0	26	15.29%
Self Employed Businessman	9	5.29%	0	0	9	5.29%
Self Employed Industrialist	-	-	0	0	-	-
Service – Accounting and Finance	69	40.59%	0	0	69	40.59%
Service – Financial Analysts	12	7.06%	0	0	12	7.06%
Others	54	31.77%	0	0	54	31.77%
	170	100	0	0		

Table 3.54 Business Profession * Awareness of Intangible Assets Cross Tabulations**Count**

	Awareness of Intangible assets		Total
	Yes	No	
Self Employed Professionals	25	1	26.00
Self Employed Businessman	5.00	4.00	9.00
Self Employed Industrialist	0.00	0.00	0.00
Service – Accounting and Finance	66.00	3.00	69.00
Service – Financial Analysts	12.00	0.00	12.00
Others	51.00	3.00	54.00
Total	159.00	11.00	170.00

Table 3.55 Chi-Square Test relating Business Profession with Awareness of Intangible Assets

	Value	Df	Asymp. Sig.(2sided)
Pearson Chi-square	23.16	5	0.000315
N of Valid cases	170		

Under Business profession maximum respondents are from Service in Accounting and Finance, followed by others and then by financial analysts.

The above table has revealed that Pearson Chi square value is 0.000315 which has been less than 0.05.

The Chi square value which has been less than 0.05 supports rejecting null hypothesis.

The above value of Chi square test shows that there is a significant influence of professional qualification on awareness of Intangible assets.

Ho4 = There is no significant influence of Professional Profile on awareness of intangible assets.

Table 3.56 Case Processing Summary of Professional Profile

	Cases					
	Valid		Missing		Total	
Industrialist	0	0	0	0	0	0
Brokers	4	2.35%	0	0	4	2.35%
Investors	39	22.94%	0	0	39	22.94%
Financial Analysts	9	5.29%	0	0	9	5.29%

Managers	10	5.88%	0	0	10	5.88%
Researchers	21	12.35%	0	0	21	12.35%
Professor in Accounting	74	43.55%			74	43.55%
Practicing in Accounting	6	3.53%			6	3.53%
Mutual fund advisor	7	4.11%			7	4.11%
Chairman	0	0			0	0
CEO	0	0			0	0
Total	170	100			170	100

Table 3.57 Professional Profile * Awareness of Intangible assets Cross Tabulations

Count

	Awareness of Intangible assets		Total
	Yes	No	
Brokers	1	3	4
Investors	30	9	39
Financial Analysts	8	1	9
Managers	6	4	10
Researchers	20	1	21
Professor in Accounting	43	31	74
Practicing in Accounting	4	3	7
Mutual fund advisor	4	2	6
Total	160	10	170

Table 3.58 Chi-Square Test relating Professional Profile with Awareness of Intangible Assets

	Value	Df	Asymp. Sig.(2sided)
Pearson Chi-square	17.86217	7	0.012608
N of Valid cases	170		

Under professional profile, people practicing in accounting have awareness of Intangible assets followed by financial analysts and then researchers.

The above table shows that Pearson Chi square value is 0.012, more than 0.05, supporting to reject Null hypothesis.

The above stated value of Chi square test shows that there is a significant influence of Professional profile on awareness of Intangible assets.

Ho5 = There is no significant influence of Work experience on awareness of intangible assets.

Table 3.59 Case Processing Summary of Work Experience

	Cases					
	Valid		Missing		Total	
0-5 years	55	32.35%	0	0	55	32.35%
6-10 years	38	22.35%	0	0	38	22.35%
10 years and above	77	45.29%	0	0	77	45.29%
	170	100	0	0	170	100

Table 3.60 - Work experience * Awareness of Intangible assets Cross Tabulations

Count

	Awareness of Intangible assets		Total
0-5 years	54	1	55
6-10 years	35	3	38
10 years and above	70	7	77
Total	159	11	170

Table 3.61 Chi-Square Test relating to Work Experience and Awareness of Intangible Assets

	Value	Df	Asymp. Sig.(2sided)
Pearson Chi-square	2.968039	2	0.226725
N of Valid cases	170		

Under work experience 70 respondents are aware of Intangible assets followed by 6-10 years of experience.

The above table reveals that Pearson Chi square value is 0.226 which has been more than 0.05, failing to reject null hypothesis.

The above stated value of the Chi square test shows that there has been no significant influence of work experience on awareness of Intangible assets.

Ho6: There is no significant influence of Business Profession on awareness of different method of measuring Intellectual Capital

Table 3.62 Business Profession * Awareness of different methods of measuring Intellectual Capital

	Tobin's q	Ratio of MV to BV	EV A (Economic Value Added)	CIV	KCE Method	VAICTM	Skandia Navigator	Not aware	Total
	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	
Self Employed Professionals	11	13	14	3	4	4	0	5	54
Self Employed Businessman	2	3	4	1	1	2	0	3	16
Self Employed Industrialist									
Service – Accounting and Finance	19	32	33	12	8	6	0	20	130
Service – Financial Analysts	4	4	3	3	3	2	0	4	23
Others	18	27	29	13	7	8	0	12	114
Total	54	79	83	32	23	22	0	44	337

Table 3.63 Chi square test relating to Business Profession and Awareness of different methods of measuring Intellectual Capital

Chi square value	10.5128
Df	28
p-value	0.998886

The above information has been collected from the respondents based on their awareness of different methods of measuring Intellectual capital. They have been given a check box where they

can select more than one method. The information collected has been more than 170 counts, as many of the respondents have filled in the check box more than one.

The above cross tabulation has shown, a respondent responding to more than one method. This has shown that respondents have been aware of more than one method of measuring Intellectual capital and on all there has been only one method named Skandia Navigator Intellectual capital which all the respondents have been not aware of.

The above table reveals that Pearson Chi square value is 0.99 which has been more than 0.05, supporting not to reject null hypothesis.

The above stated value of Chi square test has shown, no significant influence of business profession on the awareness of different methods of measuring intellectual capital.

Ho7: There is no significant influence of Business Profession on Disclosing Intellectual Capital in Financial statements

Table 3.64 Business profession * Disclosure of Intellectual Capital in Financial Statements
Count

Business Professions	Yes	No	Total
Self Employed Businessman	5	4	9
Self Employed Professionals	24	2	26
Self Employed Industrialist			
Service – Accounting and Finance	63	3	69
Service – Financial Analysts	10	2	12
Others	50	4	54
Total	152	15	170

Table 3.65 Chi square test relating to Business Profession and Disclosure of Intellectual Capital in Financial Statements

Chi square value	16.82231
Df	4
p-value	0.002093

The above cross tabulation shows that a respondent has responded to disclose Intellectual Capital in financial statements considering respondents from accounting and finance, agreed to this suggestion and it has been followed by other and then financial analysts.

The above table shows that Pearson Chi square value is 0.002, less than 0.05, supporting rejecting null hypothesis.

The above stated value of Chi square test shows that there is a significant influence of business profession on the disclosure of Intellectual Capital in the financial statements.

Ho8: There is no significant influence of Professional Profile on Disclosing Intellectual Capital in Financial statements

Table 3.66 Professional Profile * Disclosure of Intellectual Capital in Financial Statements

Professional profile	Yes	No	Total
Brokers	3	1	4
Investors	29	10	39
Financial Analysts	6	3	9
Managers	7	3	10
Researchers	16	5	21
Professor in Accounting	30	44	74
Practicing in Accounting	4	2	6
Mutual fund advisor	4	3	7
Chairman			
CEO			
Total	99	71	170

Table 3.67 Chi square test relating to Professional Profile and Disclosure of Intellectual Capital in Financial Statements

Chi square value	17.95172
Df	7
p-value	0.01219

The above cross tabulation shows that a respondent has responded by disclosing Intellectual Capital in financial statements. Where respondents from accounting and finance agreed to this suggestion, has been followed by researchers.

The above table reveals that Pearson Chi square value is 0.012 which is less than 0.05, supporting to reject null hypothesis.

The above stated value of Chi square test shows that has been a significant influence of Professional profile on the disclosure of Intellectual Capital in the financial statements.

Ho9: There is no significant influence of Business Profession on Developing new method for measuring Intellectual Capital

Table 3.68 Business Profession * Developing new method for measuring Intellectual capital

	Yes	No	Total
Self Employed Businessman	5	4	9
Self Employed Professionals	24	2	26
Self Employed Industrialist			
Service – Accounting and Finance	63	3	69
Service – Financial Analysts	10	2	12
Others	50	4	54
Total	152	15	170

Table 3.69 Chi square test relating to Business Profession and Developing new method for measuring Intellectual capital

Chi square value	16.82231
Df	4
p-value	0.002093

The above cross tabulation shows that a respondent has responded by disclosing Intellectual Capital in financial statements where respondents from accounting and finance agreed to this suggestion, followed by researchers.

The above table reveals that Pearson Chi square value is 0.002, more than 0.05, supporting to reject null hypothesis.

The above stated value of Chi square test shows that there has been a significant influence of Business profession on developing new methods for measuring Intellectual Capital.

Ho9: There is no significant influence of Professional Profile on Developing new method for measuring Intellectual Capital

Table 3.70 Professional Profile * Developing new method for measuring Intellectual capital Count

Professional profile	Yes	No	Total
Brokers	4	0	4
Investors	35	4	39
Financial Analysts	8	1	9
Managers	9	1	10
Researchers	10	11	21
Professor in Accounting	60	14	74
Practicing in Accounting	5	1	6
Mutual fund advisor	5	2	7
Chairman			
CEO			
Total	136	34	170

Table 3.71 Chi square test relating to Business Profession * Developing new method for measuring Intellectual capital

Chi square value	18.56260106
Df	7
p-value	0.009673771

The above cross tabulation shows that respondents have given their opinion by disclosing Intellectual Capital in financial statements where respondents from accounting and finance agreed to this suggestion, and also followed by researchers.

The above table shows that Pearson Chi square value is 0.009, less than 0.05, supporting to reject null hypothesis.

The above stated value of Chi square test shows that there has been a significant influence of Professional profile on developing new methods for measuring Intellectual Capital.

3.9 Observations and Suggestions

Based on the above discussion, the following are the observations and suggestions;

- Nifty 50 companies have been selected as samples for study. Companies that have disclosed Intellectual capital term, has been related to the development of new products and the patents and designs granted. It has given only the information relating to the expenses incurred for innovations in the business and the patents which have been filled in and granted. But Intellectual capital has not only talked about R&D and Patents, but also about relational capital, structural capital, and human capital, providing the roadmap for the next part of analysis: to what extent are companies disclosing the items relating to the above three classifications?
- It has been highlighted that the total score achieved is maximum in External (Relational) capital followed by Internal (Structural) capital and then, human capital. It has been found that human capital has been given the least importance for disclosure in annual reports. The conclusion has opened a door for the researcher to collect opinion about the awareness of the concept, methods and variables for quantification of Intellectual Capital.
- Descriptive statistics of survey has concluded that human capital comprising of employee competence and manager's attitude has been given more importance in valuing intellectual capital.
- Respondents have recommended that intellectual capital should be quantified and disclosed in the annual reports, as the business profession and professional profile have been influenced significantly by disclosing intellectual capital in financial statements. Secondly, business profession and professional profile have been the only variable that have given significant influence on the awareness of intangible assets but their influence on having knowledge relating to different measuring methods is not significant. This gave a roadmap to develop a new model to measure Intellectual Capital.
- Based on Principal Component analysis, the factors relating to management have been explained with a substantial portion of variance. The variable related to human capital, namely, employee benefit cost and manager's attitude compared to other variables have

been considered in first component. It is supported by the mean score, where mean score of human capital is higher compared to other dimensions of Intellectual Capital.

- The findings of the above quantitative study have laid down the foundation for developing model to measure intellectual capital. But to bring reliability, the new method will be compared with the common model adopted by most of the research scholars named Value Added Intellectual Co-efficient (VAICTM) model of intellectual capital and the impact of both will be studied on the financial performance of the companies in the next chapter.

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