CHAPTER FIVE
FINDINGS AND CONCLUSION

Contents

5.1 Summary, Findings and Conclusions

Historically, accounting has focused solely on financial record-keeping. However, due to the growing need for comprehensive information, the role of accountants has expanded from simple transaction recording to providing multi-dimensional insights. This broader scope of information has facilitated decision-makers in future-oriented tasks of policy formulation and investment decisions as traditional financial data, covering past and present activities, operations, and assets, often lacked the depth required for these decisions.

Simultaneously, the industrial economy has evolved into a knowledge-based economy, where intangible assets like human, structural, and relational capital, collectively known as intellectual capital, have become crucial. In the knowledge economy, themes such as Intellectual Property, Knowledge Management and Intellectual Capital have progressively gained vital significance and have captured the attention of academia and management

practitioners alike. The concept of Intellectual Capital is over four decades old and in all these years, the rich corpus of literature has explored various aspects of Intellectual Capital. The major focus of literature review has been on conceptualization, classification and measurement of Intellectual Capital. It has been classified into human capital, structural capital and relational capital as it includes skills, processes, and relationships, valuable for enhancing corporate value. As noted by Grzegorz Urbanek, 'entities rich in intellectual capital can create significant value' (Urbanek, 2016). Despite its importance, intellectual capital has remained largely hidden in financial statements, necessitating its proper valuation and integration into performance metrics. Most of the research on intellectual capital valuation has been conducted in developed countries, with limited studies in developing nations. Existing research often overlooks various critical aspects, presenting a need for a comprehensive evaluation of methodologies for measuring intellectual capital. In essence, the shift from focus on tangible assets to intellectual capital has reflected the changing dynamics of the economy. This requires analysing traditional accounting disclosure practices and developing new frameworks to assess and report on these intangible assets. Firms now need to effectively measure and manage intellectual capital to maintain competitiveness and drive growth.

Researchers and practitioners have constantly endeavored to design better models and methods to recognise, measure and manage Intellectual Capital with an intention to disclose in the annual reports. The Value Added Intellectual Coefficient(VAIC™) model by Ante Pulic is one such successful effort which has attracted many scholars and has provided the scope for numerous research studies in the field of intellectual capital. However, in earlier years, the VAIC^{TM} model has been criticized pertaining to the method adopted for structural capital efficiency in the model. Secondly, the literature review revealed that this model has been adopted by many researchers, and still has not been accepted universally due to the limitations in the model which is- calculation of Structural capital and its efficiency. This model provides an efficiency ratio and not the value, hence, its acceptance as a universal model is a far-fetched reality. In this research, this issue has been addressed by proposing a novel approach to quantify Intellectual capital and link the same with the financial

performance indicators so that the companies might adopt this model to disclose in the annual reports.

As put forth in chapter 1, the main objective of this study is to investigate the current state of measuring and disclosing Intellectual Capital and its effects on the financial performance of listed companies in India. This thesis has been primarily motivated by the extent to which listed companies in India have disclosed the value of Intellectual Capital. The research has investigated the perceptions of various interested groups concerning Intellectual capital value in Indian Companies. In addition, there has been paucity of prior comprehensive academic studies in the area concerning the disclosure of intellectual capital and its measurement with financial performance in the Asian region, particularly in India. Moreover, due to the shift from manufacturing to service sector, there has been a need to measure and disclose the value of Intellectual Capital in the annual reports of companies.

This research endeavour has emphasised on the disclosure practices followed by the listed companies, and identify the link of intellectual capital model with the financial performance indicators in both, the service sector and the manufacturing sector. Attempt has been made to identify the disclosure practices of the listed companies, collecting the opinions in respect of disclosure and measurement of intellectual capital by quantitative method and to identify the link of intellectual capital model, one which has been already developed – Value Added Intellectual Co-efficient(VAIC^{TM})and accepted widely by the researchers, and one which researcher has attempted to develop in the present study - Intellectual Capital Value (ICValue), with the financial performance indicators by quantitative method. The outcome of the case study is that, by employing ICValue strong relationships have been identified with performance indicators in almost all companies, but when VAIC^{TM} model has been analysed with financial indicators, it has been revealed that only in ACC Ltd. strong relationships has been established for some performance indicators, but not in remaining companies, providing a roadmap to adopt new model (ICValue) over the widely accepted model (VAIC^{TM}).

This research endeavour has been presented in FIVE Chapters. The major summary and conclusion derived from this research work are as follows:

❖ Chapter One deals with the introductory part of the research work. This chapter has dealt with the rationale of the study, objectives of the study, the methodology used for the research and spells out the plan of the study.

❖ Chapter Two discusses the concept, need and historical developments of Intellectual capital globally as well as in India.

This chapter has thrown light on some interesting findings as given below.

1. The concept of productive and unproductive labor has been multifaceted, and the productivity of services and immaterial products still debated in the economic world. The importance of human intelligence, the skills and knowledge provided by educators have been recognized as a vital component of a nation's capital and productivity.
2. The terms “human capital” or “intellectual capital”, have not been recognised by the economists but highlighted the importance of human knowledge and organizational skills representing intangible to be the utmost importance for the organizations during 19th century. Consequently, human capital has been recognized as a crucial resource for organizations, and investment in it has been deemed essential for long-term success.
3. The performance of human resources holds substantial influence over the performance of the organization, has necessitated their effective management concluding, vital importance of human resources in the success of organizations while their proper management has been critical in achieving shared objectives even during the era of production centric economy where services have not been recognized much as crucial for economic development.
4. The future of a company has not been depended solely in tangible fixed assets but in the hands of human intellect. Recognizing human resources as valuable assets and investing in their development and management has been crucial for the prosperity and longevity of organizations in the ever-evolving business landscape.
5. The debate surrounding the categorization of employees as human capital remains a significant topic within the business community. While proponents have argued for recognizing employees as valuable assets, challenges have been persisted in quantifying and including human capital in financial statements due to its intangible nature. Nonetheless, the growing prominence of the service-based economy has underscored the critical role of human resources in shaping a company's reputation and competitive advantage. By investing in employee development and education, organization have unlocked the potential of their human capital,

ultimately leading to long-term success and sustainability giving boost to Human Resource Accounting.

6. While there have been attempts to measure and disclose the value of human resources in financial statements, current approaches have limitations that hinder an accurate representation of their worth. The intangible nature of human resources has necessitated the development of accounting methods that consider these limitations and provide a more comprehensive understanding of their value. Acknowledging human resources as intellectual capital and embracing strategies that harness their potential can better align financial reporting with the true value they bring to organizations.
7. It has been important to recognize that not all knowledge qualifies as part of intellectual capital, only knowledge that has been beneficial to the enterprise holds significance in this context. To be considered as intellectual capital, knowledge must possess characteristics that allow it to be reused and recycled for the benefit of the company.
8. Intellectual Capital has been defined as the collective sum of knowledge assets that a company owns or controls providing competitive advantages to an organization and creating significant value. This definition has emphasized intellectual capital going beyond general intangible assets and highlighting its ability to generate high value. It has recognized intellectual capital as not a singular asset but rather a combination of various knowledge assets like human capital, structural capital and customer capital. This concept acknowledges that intellectual capital has an economic impact where 1 + 1 has been greater than 2, concept of synergy, making more suitable for studying the relationship between intellectual capital and enterprise performance considering all the various knowledge assets.
9. Intellectual Capital has been knowledge for the firm which has been converted into profits but with no physical existence, non-monetary in nature resulting, no place in financial statements.
10. It has been inferred that different authors have used various terms interchangeably, such as intangible assets, intangible capital, intellectual capital and intangible resources, referring to the same concept. Despite the lack of a universally accepted definition and measurement method in the accounting field, intellectual capital has represented the hidden and valuable knowledge within a company contributing to its competitive advantage.
11. The theory of Trinity also known as the three-component theory, is a framework that has expanded the elements of intellectual capital beyond the dualism perspective of human capital

and structural capital and included relational capital, which emphasized the value derived from relationships, networks, and collaborations within and outside the organization.

12. The review of disclosing practices has summarised that there is paucity of research work in this field, the available research only identifies the practices followed by various listed companies of different stock exchanges and the general idea has developed that still most of the listed companies have not reported Intellectual capital to the extent what is needed. Nifty 50 companies in Indian context have been selected for identifying disclosure practices, but this disclosure is limited to only one year of the study. It has been reported that during this transition period of economy from production to knowledge based, the indicator for sustainable performance has been depended on future performance and future performance is no longer depended on physical and financial capital but they have depended on intangible assets considering people, their knowledge, their skill and experience put into practice.
13. Corporate sector has explored new accounting practices in disclosing intellectual capital in annual reports with report of financial and physical capital. (ul Rehman, W., ur Rehman, H., & Mujaddad, H. G).
14. The literature review of impact study has shown the result in both the direction, positive and negative, for the impact of intellectual capital value on the selected financial performance variables. Human capital has shown positive and significant impact in most of the research study considered under literature study while structural capital has shown no significant impact in most of the study. Capital employed has shown positive impact in most of the research study.
15. The above discussion has reflected that right from the emergence of the idea of intellectual capital in 1965 by Keneth Gailbraith, huge number of research output in the form of articles, research work, thesis, etc. have been produced by researchers and social scientist, but all the research endeavors completed till date have addressed issues related to valuation and disclosure of intellectual capital as an assets considering its economic impact.
16. Majority of research output has addressed the issue of valuation of Intellectual capital considering Value Added Intellectual coefficient measuring the efficiency using the ratios, but efforts have been missed out in the field of proper valuation of intellectual capital and / or refinement of valuation process based on merits and demerits of the present process in practice.
17. Discussion has established a groundwork, that research in the field of intellectual capital has been carried out in last sixty plus years with limited focus and eliminating important issues

like: Valuation practices, disclosure of the term structural capital and analysing the impact of intellectual capital in the performance of the organisation are missing.

18. Providing a roadmap for the present research endeavor entitled "Impact of Intellectual capital on the financial performance of select listed Indian Companies" with intention to:
    a. To measure the value of Intellectual capital.
    b. To study the impact of Intellectual capital on financial performance.
    c. To conduct detailed content analysis of disclosure of Intellectual capital.
    d. To analyse the disclosure practices adopted by listed Indian Companies.
19. To address these research gaps, the proposed study has aimed to analyse the disclosure practices followed by listed Indian companies, collected the opinions from academicians, professionals, and financial analysts regarding the variables to be considered for developing a new method for assessing value creation by Intellectual capital. Finally, the study has aimed to evaluate the impact of intellectual capital on the financial performance variables selected for study considering model which has been already developed and adopted by many researchers, also the model which is developed by the researcher in the present study.

❖ Chapter three seeks to analyse the disclosure practices followed by listed Indian Companies and to gain insight from Chartered Accountants, Cost Accountants, Retails Investors, financial analysts, academicians and professionals with regards to the prevailing measurement methods of Intellectual Capital in India. For this purpose, the aim has been to analyse the disclosure practices followed by the listed Indian Companies. Hence, third chapter has been divided into three-parts, section one is dedicated to the detailed content analysis of disclosure practices, section two deals with detailed analysis of disclosure of classification of intellectual capital and section three seeks opinions of professionals and academicians for further analysis.

1. The result of content analysis in section one is presented below with major findings:
    i. From Nifty 50 companies in the year 2020-21, following companies Adani Ports, IOC, Tata Steel, Wipro Ltd, Titan, ICICI bank, Tech Mahindra, Ultra Tech Cement, Hero Motor, UPL and L&T are the companies who have disclosed Intellectual Capital in the form of specific amount spent on Research and Development expenses, Patents filled, designed registered and the new products developed.
    ii. Other companies like SBI Life Insurance, Hindalco, Reliance, HDFC Bank, Eicher Motors and Maruti Ltd, have disclosed the information under three subheadings like

under Input, Output and Outcomes. Under Input they have mentioned the investment done under Research and Development, considered as resources for the business, patents filled, number of employees under Research and Development and number of centers under R&D. Under output they have disclosed new products launched and patent granted, the result of R&D expenditure. Lastly, they have mentioned the outcomes disclosing the business revenue increased due to the new product launched.

iii. The rest of the companies have disclosed the same information but under only two headings, input and output.

iv. It has been summarised that corporate houses have been unable to assign numbers to Intellectual capital. They have presented intellectual capital in the form of input and output in relation to research and development expenses. All Corporate houses have failed to recognize the value of intellectual capital in their annual reports.

v. It has been suggested that corporate entities have provided information with respect to 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 encompassed customers satisfactions, management philosophy, and human competence in relation to relational capital, structural capital and human capital respectively. There has been a need to investigate the extent to which companies disclose information pertaining to these three classifications.

2. The second section of the chapter has dealt with disclosure analysis of different classifications of intellectual capital and its components. The findings of this disclosure analysis is as follows:

   i. The individual item analysis under Internal Capital has shown that 'Processes' is an item which has been disclosed by all the companies selected under study with 48 companies disclosing it for all five years of the study. Management Philosophy, an important item of disclosure for intellectual capital, has not been disclosed for all five years by any company, only 9 companies have tried to disclose it for less than five years of study. Similar result has been for Copyright, an intangible asset. For Copyright, the similar analysis has not been applicable as it will be disclosed by the company, when they go for copyright. Hence the analysis has shown that 33 companies in five years of study have not applied for copyright and none of the companies has disclosed it for all

five years. Patents and innovations have shown similar disclosure practices, as based on innovations, companies can go for filling the patent. So, a sizable number of companies have gone for innovations and have reported the patent/s of the companies for all five years.

ii. External Capital, has been referred to as Relational Capital or Customer Capital, pertaining to the resources that facilitate interactions with external entities. Among the sample companies, all components of customer capital have been disclosed for different number of years, indicating awareness and consistent disclosure practices for customer capital items. Notably, customer-related aspects have received significant emphasis due to their pivotal role. Although customer details have been consistently disclosed but often omitting their satisfaction level. Only Indian Oil Corporation (IOC) has disclosed customer satisfaction in 2020-21, underscoring its growing recognition. Similarly, 'Loyalty' has been considered as another crucial external capital, gathered considerable attention, evidencing widespread disclosure practices in annual reports.

iii. The analysis of human capital has encompassed ten disclosure elements pertaining to human capital. Notably, despite the intrinsic significance of employee expertise within human capital, it has remained universally unaddressed in corporate disclosures. Conversely, education and training has manifested appreciable prominence in disclosure practices, except for Divis Laboratory and Sun Pharma, the former has not disclosed either item once in five years, or the latter has omitted training disclosure for a single year. Conversely, other entities consistently have disclosed these elements over the five-year study period. The significance of safety as a disclosure item has been underscored by user interest, gauging employee welfare measures, resulting in widespread disclosure practices over the observed period.

iv. None of the companies of the sample, disclose all the items of intellectual capital disclosure index in their annual reports for all five years. This has shown the unawareness about the concept and the items of intellectual capital among corporate houses. Even none of the corporate houses have assigned numbers to intellectual capital in their annual reports.

v. This has provided a roadmap to collect the opinion of the experts and academicians in relation to the awareness of this term as intangible assets and the factors to be given importance in measuring the value of Intellectual Capital.

3. Section three deals with collecting opinion from experts and academicians about awareness of the term intellectual capital, the measuring methods and the opinions about the importance given to variables for measuring Intellectual Capital. The result of the empirical analysis has provided information about the awareness of term and methods of Intellectual capital in India.

The major findings of the study are explained below:

i. First part of the findings shows Demographic Profile of the Respondents:

a) The most frequent place of residence has accounted for 132 individuals, constituting approximately 79.04% of the total sample residing in Vadodara. A relatively moderate at Bangalore and Hyderabad, low frequency residing in Anand and the lowest frequency is at Bharuch, Jaipur, Tamilnadu, Kariyapatti, Mehdipatnam and Pune contributing 0.6% of the total sample. Overall, most individuals in the sample have been residing in Vadodara, followed by Bangalore, while other locations exhibit lower frequencies.

b) A predominant proportion of respondents have accounted for 49.41% of the total respondents possessing postgraduate qualifications in Commerce and Management, while a notable subset comprising 18.24% have attained Ph.D. credentials within the same disciplinary domain. The blend of respondent's 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.

c) 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 was Chartered Accountancy (CA), comprising 19.02% of the total, followed by Cost and Works Accountancy (CWA), Certified Financial Analyst (CFA), and Company Secretary (CS). Notably, several respondents have held dual professional

designations, such as CA and CWA, CWA and LLB, and CS and CFA. The prevalence of Chartered Accountant professionals within the respondent regiment underscores their potential to provide valuable insights, thereby enhancing the depth of our survey for subsequent analyses.

d) The tabulated data has indicated 48.22% of the respondents have been affiliated with the service sector, with a notable concentration in the domains of accounting and finance, while the remaining portion has been pertained to financial analysts. This reflects the relevance and importance of their views as they have been professionals working in the related fields and enriching the responses and outcome of the survey. Additionally, among the self-employed category, 15.29% have been self-employed professionals, with a subset belonging to unspecified occupational categories not delineated in the questionnaire. Consequently, the predominant representation of respondents from the accounting and finance sector has underscored the significance of their perspectives in augmenting the depth and breadth of our survey, thereby enriching its analytical scope.

e) Professional designation of accounting professors has been comprised of 43.55% of the total. Additionally, 22.94% of respondents have 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% has indicated active engagement in accounting practice. This distribution has suggested the potential value inherent in their insights pertaining to valuation variables, thereby offering valuable inputs for the development of novel methodological frameworks.

f) A notable portion of respondents constituting 32.94%, possess professional experience spanning less than five years, while a majority has been comprised of 45.3% or 77 individuals accruing experience below the decade mark. Furthermore, 21.76% of respondents, totalling 37 individuals, boast experience has exceeded ten years. This diversity in professional tenure among respondents have shown potential significance in elucidating insights into the levels of awareness and the perceived necessity surrounding the disclosure of Intellectual Capital within financial statements.

ii. The next part of the findings has shown the result of inferential statistics including reliability test, Chi Square and Factor Analysis, carried out on the responses received from respondents.

a) The reliability tests, Cronbach alpha coefficient determined the attributes / opinions have been strongly related to each other and to the composite score. All dimensions of the questionnaire related with measuring opinion have been tested and the Cronbach alpha ranged from 0.68722 to 0.97158 has shown internal reliability of the scale. Testing the scale for reliability has revealed that for all the above statements Cronbach alpha coefficient has been of 0.9715. Therefore, this scale has been considered reliable, and it has been capable enough for further data processing.

b) Convergent validity has been measured by comparing mean scores of scales with other measures of the same construct. It has demonstrated, on average, respondents have placed the highest importance on Human Capital, followed by Relational Capital and Structural Capital.

c) Apart for the above-mentioned findings, Factor Analysis has been conducted. Factor analysis has attempted to identify underlying variables or factors that has explained the pattern of correlations within a set of observed variables. Factor analysis has been often used in data reduction to identify a small number of factors explaining most of the variance, observed in a much larger manifest variable. Factor analysis has also been used to generate hypothesis regarding casual mechanisms or to screen variables for subsequent analysis.

d) Factor 1, most dominant, explaining a substantial portion of the variance at 64.264%. These variables collectively represent aspects related to Managers help employees in solving official problems, is supportive to innovations, understand all factors of employee satisfaction, engage more ideas in industry, including Employee skills are upgraded, are motivated to share new and innovative ideas, Employees are highly educated have been 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.

e) Factor 2 accounts for 8.602% of the variance and has included variables such as Research and Development invested in product design, Systems allow easy information access, Procedures support innovation, Customers are loyal, Increase revenue per employee, and implement new ideas have been the factors appearing to capture aspects related to Research and development of the organisation.

f) Factor 3 explains 4.451% of the variance and is characterized by variables such as Atmosphere is supportive, Firm is bureaucratic nightmare, Support development of ideas, Procedures support innovations, and Longevity of relationships are the factors have been related to the administrative capital compelling organisational capital of the firm.

g) Factor 4, with a variance of 3.867%, includes variables like Use what customers want to make money, Launch products that consumers do not desire, and don't care what customers want are the factors have been related to the customer capital of the firm.

h) On the basis of Factor Analysis, it has been summarized that all the variables relating to structural capital, research and development, customer capital and relational capital have been the capital created by employees and management's knowledge, skill, experience and intellect. Hereafter, variables relating to human cost including employee expenses and management remuneration have been considered in methods of quantifying intellectual capital.

i) Various Chi-squares have been conducted to check the influence of one factor over the other. The analysis has revealed that there is a significant influence of highest qualification i.e. Graduate / Post Graduate / Ph.D. in Commerce and management or others, Professional Qualifications CA/CWA/CS/CFA/CMA/LLB and others; Business Professions i.e. Self-employed professionals / Businessman / Industrialist or service in Accounting and Finance or Finance Analyst or Others and Professional Profile i.e. Industrialist / Brokers / Investors / Financial Analysts / Managers / Researchers / Professor in Accounting / Practicing in Accounting / Mutual Fund Advisor etc., on awareness of Intangible Assets. It has been found that there has been a significant influence of all the above variables on awareness of Intangible

Assets. Apart from that, work experience has no significant influence on awareness of Intangible Assets.

j) There has been no significant influence of business professions on the awareness of different methods of measuring Intellectual Capital, while business profession has significant influence on disclosure of intellectual capital in financial statements and developing new methods for measuring Intellectual Capital.

k) There has been a significant influence of professional profile on developing new methods for measuring Intellectual Capital.

l) It has been recommended that intellectual capital should be measured and should be disclosed in the annual reports in financial statements as the business profession does have a significant influence on disclosing this variable in financial statements. This has been considered due to the significant knowledge business profession possessed about the term intangible assets. The variables have been considered are employee benefit cost and manager's attitude compared to other variables due to more importance as its mean score has been high compared to other variables.

❖ Chapter four has presented an empirical study to measure the value of Intellectual Capital by Value Added Intellectual Coefficient(VAIC^{TM}) and Intellectual Capital Value(ICValue), and has analysed the relationship of Intellectual Capital with financial performance indicators-Economic Value Added, Gross Value Added, Market Capitalisation and Net Value Added of the companies, as the main objective has been to examine the impact of Intellectual Capital on financial performance of listed Indian Companies.

1. The study has been conducted by selecting companies from the manufacturing and service sectors based on their disclosure of Economic Value Added(EVA) in their annual reports in the duration of 2007-08 to 2021-22.
2. The chapter has been structured into three sections. The first section examined the impact of intellectual capital on financial performance, utilizing the Value-Added Intellectual Coefficient (VAIC^{TM}) model. The second section has focused on developing a model and has assessed its effectiveness by determining its relationship with financial performance. The model's formulation has been based on key variables identified through a literature review, as well as insights from professionals and researchers obtained via a scientifically

designed structured questionnaire. The third section has compared the results of the relationship between the VAIC^{TM} model and financial performance with those of the newly proposed model, evaluating its impact on financial performance.

3. Intellectual Capital and its components have been measured for all sample companies considering the model VAIC^{TM} . Dependent variables considered for the study have been calculated and the relationship of components and VAIC^{TM} have been analysed with each dependent variable with the help of Pearson's Correlation and simple regression.
4. The hypothesis testing and the estimation of regression equation analysis have shown the following results:
5. **H1:** Intellectual Capital(VAIC^{TM}) of a firm is positively related to its financial performance (Economic Value Added (EVA)).
    a. The results for manufacturing companies have shown that there is a positive and statistically significant relationship between VAIC^{TM} with EVA. This has shown that there is a significant and positive impact of Intellectual Capital (VAIC^{TM}) on Economic Value Added (EVA). While for service companies the data does not support the hypothesis and has failed to establish a positive and significant relationship with VAIC^{TM} with EVA.
6. **H2:** Intellectual Capital (VAIC^{TM}) of a firm is positively related to its financial performance (Gross Value Added (GVA)).
    a. The results for manufacturing companies have shown that there has been a positive and statistically significant relationship of VAIC^{TM} with Gross Value Added (GVA). This has shown that data supported the hypothesis and hence, it can be said that there has been a significant and positive impact of Intellectual Capital (VAIC^{TM}) on Gross Value Added (GVA). While for service companies, data has not supported H2 rejecting the hypothesis and accepting that there has been no positive significant impact of Intellectual Capital (VAIC^{TM}) on Gross Value Added (GVA) for service companies.
7. **H3:** Intellectual Capital (VAIC^{TM}) of a firm is positively related to its financial performance (Market Capitalisation (MCap)).
    a. The results for manufacturing companies have shown that there has been a significant relationship of components of VAIC^{TM} with Market Capitalisation,

while VAIC^{TM} has no statistically significant relationship with market Capitalisation. This has shown that data does not support H3 and hence it can be said that there has been no positive and significant impact of Intellectual Capital(VAIC^{TM}) on Market Capitalisation(MCap) for all the companies under study.

8. **H4**: Intellectual Capital(VAIC^{TM}) of a firm is positively related to its financial performance (Net Value Added(NVA)).
    a. The results for manufacturing companies have shown that there has been a significant relationship of components of VAIC^{TM} with Net Value Added, while VAIC^{TM} have a significant relationship with Net Value Added only for ACC Ltd and not with HUL Ltd in manufacturing sector, while for service companies, capital employed efficiency have a significant impact on NVA while VAIC^{TM} and Intellectual Capital Efficiency (ICE) have no significant impact on NVA. This has shown that data doesn't support H4 and hence it can be said that there is no positive and significant impact of Intellectual Capital (VAIC^{TM}) on NVA for all the companies selected as samples under study except ACC Ltd.
9. The findings of VAIC^{TM} with financial performance has shown the mixed results where service sector companies have no significant impact of Intellectual capital (VAIC^{TM}) on financial performance. The mixed results have given the base to develop such a model that can measure the value of Intellectual Capital and can have a significant impact on the financial performance of the companies. Researcher has tried to develop a model named Intellectual Capital Value (ICValue) by capitalising the average employee cost and managerial remunerations with the weighted average cost of capital.
10. The second section of chapter Four has calculated ICValue for all sample companies under both the sectors and has analysed ICValue relationship with financial performance indicators considering regression analysis statistical tools.
11. H5: Intellectual Capital (ICValue) of a firm is positively related to its financial performance Economic Value Added(EVA).
    a. ICValue has been a highly significant predictor of EVA in service companies and partly in manufacturing companies namely HUL ltd and also with both the companies of service sector, as the relationship has been 80% with all the three

companies, while there is no significant positive relationship of ICValue with EVA in ACC LTd as relationship is below 10% . This has shown that data supports H5 and can be said that firm has been positively and significantly related to Economic Value Added(EVA) except ACC Ltd.

12. **H6:** Intellectual Capital(ICValue) of a firm is positively related to its financial performance Gross Value Added(GVA).
    a. ICValue has been a highly significant predictor of GVA in service companies and partly in manufacturing companies namely HUL ltd while there is no significant relationship of ICValue with GVA in ACC Ltd. ICValue is having significant positive relationship with GVA for both the service sector companies. Hence the data support H6, and has concluded that there has been a significant positive impact of Intellectual Capital(ICValue) on Gross Value Addition(GVA) except ACC Ltd.,
13. **H7:** Intellectual Capital(ICValue) of a firm is positively related to its financial performance (Market Capitalisation (MCap)).
    a. For ACC Ltd, there has been a strong positive and statistically significant relationship between Market Capitalisation and ICValue, suggesting that as ICValue increases, Market Capitalisation also increases significantly.
    b. For all sample companies namely ACC Ltd, HUL Ltd, Infosys Ltd, and TCS Ltd, there has been a strong, positive and statistically significant relationship between Intellectual Capital(ICValue) and market capitalisation, indicating that data supports H7.
14. **H8:** Intellectual Capital(ICValue) of a firm is positively related to its financial performance (Net Value Addition (NVA)).
    a. ICValue is a highly significant predictor of Net Value Addition for all the sample companies under study. For all sample companies namely ACC Ltd, HUL Ltd, Infosys Ltd, and TCS Ltd, data has shown the strong, positive and statistically significant relationship between Intellectual Capital and Net Value Added, indicating that data supports H8.
15. The third section compares the results of the relationship between the VAIC^{TM} model and financial performance with those of the ICValue model and financial performance, by evaluating its impact on financial performance. To test the efficiency of the new model, the

result of this model will be compared with the VAIC^{TM} model, the corresponding hypothesis has been proposed:

16. **H9:** In comparison to VAIC^{TM} model, ICValue model is a better predictor of relationship between Intellectual Capital and Economic Value Added(EVA).
    a. The models have been highly significant across all companies, with VAIC^{TM} having a notable positive influence in ACC and HUL, while ICValue has been a strong predictor of EVA for Infosys and TCS, for Infosys Ltd and TCS Ltd hypothesis has been accepted. For manufacturing companies hypothesis has been rejected, for EVA it can be said that ICValue has not been a better predictor of relationship between Intellectual Capital and Economic Value Added(EVA), while VAICTM is a better predictor of relationship between Intellectual Capital and Economic Value Added(EVA),
17. **H10:** In comparison to VAIC^{TM} model, ICValue model is a better predictor of relationship between Intellectual Capital and Gross Value Added(GVA).
    a. For all the sample companies from both the sector, ICValue model has been a better predictor of relationship between Intellectual Capital and Gross Value Added(GVA) as strong relationship can be seen in HUL Ltd., Infosys Ltd and TCS Ltd, hence the hypothesis has been accepted.
18. **H11:** In comparison to VAIC^{TM} model, ICValue model is a better predictor of relationship between Intellectual Capital and Market Capitalisation(MCap).
    a. For all the sample companies from both the sector, ICValue model has been a better predictor of relationship between Intellectual Capital and Market Capitalisation(MCap) as strong relationship can be seen, hence the hypothesis has been accepted.
19. **H12:** In comparison to VAIC^{TM} model, ICValue model is a better predictor of relationship between Intellectual Capital and Net Value Added(NVA).
    a. For all the sample companies from both the sector, ICValue model has been a better predictor of relationship between Intellectual Capital and Net Value Added(GVA) as strong relationship can be seen in HUL Ltd., Infosys Ltd and TCS Ltd, hence the hypothesis has been accepted.
20. **Major Findings:**

i. ICValue has been having a positive influence on EVA for all sample companies.
ii. ICValue has been having significant impact on EVA for service companies.
iii. ICValue has been having a positive influence on GVA for all sample companies.
iv. ICValue has been having a significant impact on GVA for service companies and HUL Ltd.
v. ICValue has been having a strong positive influence on Market Capitalisation for all sample companies.
vi. ICValue has been having a strong positive influence on Net Value Added for all sample companies.

21. To conclude, ICValue has been a better predictor for financial performance compared to VAIC™.
22. Clubbing both the model, researcher has established a strong relationship between Intellectual Capital and Financial Performance indicators of all companies. It can be concluded that by employing new model and clubbing it with the efficiency model, company has been able to create a strong relationship with performance variables based on financial statements and market capitalisation for both the sectors.
23. Finally, the new model should be adopted by the companies in order to bring more transparency in disclosure practices and to assist the stakeholders in their decisions.

5.2 Objective wise Findings

The main objective of this research endeavour has been to study the impact of Intellectual Capital on the financial performance of select listed Indian Companies. The study has been conducted after studying the disclosure practices undertaken by the listed Indian Companies. Researcher has evaluated the opinion of the experts, scholars and professionals regarding the valuation of Intellectual Capital. Researcher has analysed the relevance of the intellectual capital model with the financial indicators considering developed and new model of measuring intellectual capital. The major findings in continuation with the objectives are stated below:

❖ **Objective 1 & 2: Expound the theoretical understanding of different approaches to the measurement of Intellectual Capital and Identify and study different models of Intellectual capital (refer Chapter 2).**

- The theoretical expounding of different approaches to the measurement of intellectual capital brought forth certain methods- Tobin's q, Economic Value Added, Market Value

Added, Calculated Intangible Value, Knowledge Capital Earnings, Value Added Intellectual Co-efficient and so on. Each method has its own significance as Tobin's q method has given the value of Intellectual Capital, where Tobin's q has given the difference between Market Capitalisation and Replacement cost. Another method, Economic Value Added has provided excess operating profit after tax over cost of capital, market value added has given the difference between market capitalisation and book value of long-term liabilities. Calculated Intangible Value method asserted to capitalise the excess profit over return on assets by Weighted Average cost of capital, Knowledge Capital Earning method asserted to capitalise the return from knowledge assets by cost of equity and Value Added Intellectual Co-efficient measured the efficiency of both- intellectual capital and tangible long-term capital.

- The study unfolded limitations in all the existing methods, Economic Value Added has been considered more as performance indicators of the company, Calculated Intangible Value considers the company that is earning return more than industry's return on assets, Knowledge Capital Earnings considers return on equity as the base for capitalisation, Market Value Added is affected by the external various other factors. The study proved that owing to these limitations none of the above methods could be adopted as universally accepted. The research probings unveiled that Value Added Intellectual Co-efficient is the most widely accepted method to investigate the relationship between VAIC^{TM} and performance indicators within India and Outside owing to its simple and easy calculation. The method considers human capital, and structural capital ignores relational capital under intellectual capital efficiency and provides the efficiency ratio, not the value of Intellectual Capital. On account of these grounds the researcher has developed a model that can measure the value of Intellectual Capital and investigate its relationship with the financial performance of the company.

❖ **Objective 3: Document the practices followed for measuring Intellectual Capital of selected Indian corporate (refer Chapter 3).**

The detailed content analysis of the Nifty 50 for the year 2020-21 resulted in the following results:

- Out of 50 listed companies, 25 companies have not disclosed the term Intellectual Capital in their annual reports.

- Out of 25 companies not disclosing the term Intellectual Capital, only 6 companies have disclosed the human capital ignoring structural and relational capital.
- The companies disclosing the term intellectual capital have disclosed the amount spent on Research and Development, number of research centres, number of employees in research centres, patents filled and granted, new product launched, ideas developed and implemented, and revenue increase in business due to new product launched.
- None of the companies have assigned numbers to Intellectual capital in annual reports,
- Detailed disclosure analysis has been conducted in the second part of study relating to disclosure practices, where disclosure index is developed with 10 items under each component and in total 30 items have been considered. Score for disclosure of that item of different dimensions are collected for five years from 2016-17 to 2020-21.

Out of the three components of Intellectual Capital, Human capital has been given least importance to disclose against structural and customer capital. It is further concluded that there is an unawareness of the disclosure of items in the annual reports relating to Intellectual Capital.

❖ **Objective 4: Ascertain the views of practising accountants, company directors, stockbrokers, investors, auditors, members of the professional bodies, academicians, researchers and managers about the method of Intellectual capital and opinion relating to the different variables to be considered in measurement method of Intellectual capital (refer Chapter 3).**

- Most respondents have been from Vadodara, with others from diverse locations such as Tamil Nadu, Bangalore, Hyderabad, Jaipur, and Pune, providing the research with geographically diverse insights. Most respondents hold postgraduate degrees in commerce and management, with 31 holding Ph.D.s in these fields, ensuring informed opinions on the research questions. A significant portion of respondents possess professional qualifications, including Chartered Accountants and Cost and Work Accountants, whose expertise enhances the reliability of the findings. Many respondents also have substantial experience in accounting and financial analysis, further contributing to the accuracy of the results. The inclusion of investors among the respondents adds another valuable perspective to the research outcomes.

- Most respondents are familiar with methods for measuring intellectual capital, with the market-to-book value ratio being the most well-known.
- Most respondents are of the opinion to disclose the value of Intellectual Capital in financial statements, while from it most are of the opinion to develop the new model of measurement, so that the value can be disclosed in the financial statements.
- Structural capital and Relational capital have been given less importance, evidenced with the mean score ranging from 3.04 to 4.23, while the mean score of human capital has been more than 4 showing that human capital has been given more importance than structural and relational capital.
- Based on the factor loading of the variables, factors relating to management and employees have been considered in valuation method of Intellectual Capital.
- Professionals recommended measuring and disclosing Intellectual capital in the annual reports of the company. They also asserted that there is a dire need to develop a new model to measure Intellectual Capital.

Objective 5: To gauge the relationship of Intellectual capital with the financial performance of selected companies (refer Chapter 4).

To achieve the above objective, researcher measured the value of Intellectual Capital by Value Added Intellectual Co-efficient (VAIC^{TM}) model and gauged the relationship with the financial indicators- EVA, GVA, MCap and NVA. The result of regression analysis for VAIC and financial indicator is as follows:

- The VAIC^{TM} model shows varying degrees of significance across companies. It is having significant relationship only for EVA and GVA in companies of Manufacturing sector while no significant relationship all indicators of service sector. As the model gives the mixed result of significance in manufacturing sector while no significance in service sector.

Objective 6: To develop a reliable model for measuring value of Intellectual capital (refer Chapter 4).

- A new model (ICValue) for measuring value of Intellectual capital has been developed considering employee expenses and management remunerations. These expenses have been capitalised and assigned the term ICValue.

- The newly developed model demonstrates significant relationships across various indicators for companies in the service sector and partially with companies of manufacturing sector.
- The newly developed model produces reliable and useful results as far as gauging the relationship of Intellectual capital with financial performance of the firm is concerned.
- The research strongly recommends valuing intellectual capital using the newly developed model and its disclosure in annual reports.
- ICValue shows strong relationship with Market Capitalisaiton in service sector companies as well as manufacturing sector companies. Hence, this model helps the stakeholders of both the sectors, as this value shows a strong influence on Market Capitalisation of the company.

Model Intellectual Capital Value (ICValue)

Intellectual Capital Value: –

Weighted Average Human Cost /Weighted Average Cost of Capital (WACC)

- Lastly by applying multiple regression combine effect of both VAIC and ICValue on financial indicators have been analysed. Value model and Efficiency model, both together give a better model to predict the financial performance of the company based on financial statements data and market capitalization.

Hence, the above results strongly contribute towards achieving the last objective i.e. 'researcher is able to develop reliable model to measure the value of Intellectual capital'. Based on the simple regression and multiple regression result, it is strongly recommended that the new model should be adopted by the company to measure and disclose the intellectual capital in the books, as the value is derived considering knowledge assets and it is measured considering historical data of knowledge assets of the company.

The newly developed model:

Intellectual Capital Value = Weighted Average Human Cost / Weighted Average Cost of Capital

5.3 Further Research Scope

The future directions of the study are as follows:

1. The newly developed model can be compared with other models such as Calculated Intangible Value (CIV) and Knowledge capital earnings (KCE^{TM}) model.

2. In future number of samples can be increased to generalise the results.
3. The present research is period specific. Future research can concentrate on different time periods and the time period can be increased from 10 years to 20 years.
4. Present work is done in Indian settings. Research can be conducted on regional/ global basis including data samples of many countries.
5. To investigate the relationship of ICValue with other indicator of intellectual capital efficiency- E-VAIC and M-VAIC shall be considered for further analysis.
6. While this study has used regression technique to investigate the strength of relationship between the variables, future researchers may prefer to use the other statistical tools such as Panel Data Analysis, Structural Equations Modelling etc to investigate the relationship of ICValue with financial indicators.

5.4 Recommendations

In the light of the above findings, the researchers would like to propose the following recommendations:

To Management

- In this knowledge intensive economy, managers of any sector should pay attention to enhance and enrich human skills through customised training and development programmes. Familiarize employees with global practices and train them on a regular basis to update their own skills and knowledge with the prevailing required skills for the organisation.
- As seen from the results during recession, the employee capital are less affected resources. Hence, this capital should be taken care of by providing satisfactory environment to employees, safeguarding their workforce, giving suitable remuneration and providing scope for self-actualisation.
- The result also shows the combine effect of human capital and capital employed. Even in the service sector, capital employed plays a significant role in financial performance of service sector companies. Hence manager should try to develop and sustain Intellectual capital along with physical capital.
- Since the results also shows that over the years Intellectual Capital has kept on increasing, the management should focus on the long-term goals rather than short term goal and quick windfall of company.

- The result of manufacturing sector is in contrary to service sector for efficiency ratio. Hence, in this sector manager should try to develop and sustain physical capital along with Intellectual Capital.

To Customers

- One of the components of Intellectual Capital is Customer capital. Customer should be alert, they should make aware the organisation through effective feedback of the product, then only they will be in true sense 'the king' for the organisation.

To Investors

- The study shows that Intellectual capital has a significant impact on market captialisation of all the companies of service as well as manufacturing sector selected as a sample for study. This phenomenon makes it clear that this value has an impact on investors for taking decisions for the firm. They should be aware about such hidden capital and such awareness can be brought when the value is disclosed in the annual reports as a voluntary disclosure.

To Accounting Institutions and Professional Bodies

- Since the existing accounting methods are made considering physical and tangible assets for manufacturing sector, they failed to give justice to knowledge-based industries. Accounting bodies, such as ICAI and ICMAI should evolve into this developed model.
- Gloablisation has brought about transformative changes in the conduct of business across nations. There is an increased necessity to align India's accounting system with global standards. Particularly, in the field of intellectual capital, measurement and reporting should be incorporated in the accounting practices as Skandia Navigator model is already adopted in Scandanavian countries.

To Practitioners and Academicians

- Practitioners and academicians should make conscious and concentrated efforts to work together and make the above mentioned recommendations to become reality and bridge the gap between academia and industry.

5.5 Conclusions

Traditional accounting measures of financial performance have long served as the primary tool for evaluating businesses by organizations and investors. However, this study challenges the narrow focus on financial performance as the sole criterion for business assessment due to the wide gap between market value and book value of the organisation. It demonstrates that, in addition to tangible resources, numerous intangible factors significantly influence corporate performance, some are recorded while some are not due to the problem of its measurement. The intangible that has not been measured is Intellectual Capital. Today Intellectual Capital is the main source of value creation however, traditional accounting model has failed to measure this important source of value creation. It has become a critical driver of competitive advantage in contemporary markets, showing the urgent need to integrate intellectual capital (IC) measurement into conventional accounting practices. Research of this nature can aid policymakers and managers in effectively measuring and leveraging intellectual capital to enhance business profitability.

As with the change of the organisation from tangibles to intangibles, it is observed that with service sector, manufacturing sectors also are dependent on intellect for the competitive advantage. The need to address this capital is increasing with increase in the use of technology. Stakeholders and managers should also be aware about this capital. The solution to this is an Intellectual Capital value which provides insight into its rational measurement which is the need of the technological era. This study presents a new model to measure Intellectual Capital – ICValue.

Literature review, the disclosure practice analysis, empirical analysis of opinions and the case study analysis have confirmed that the objectives with which this study was undertaken have been effectively achieved. Given that other specifically designed Intellectual capital measurement models carrying limitations, an alternative measure of intellectual capital, a model which is free from defects is presented in this study. ICValue is based on publicly available data from financial statements and can be used for public and private companies. It is crystallised from the case study analysis that measuring Intellectual capital by ICValue method has proved to be conducive for implementation being simple and easy to calculate and inexpensive to incorporate. Thus, its advantage is that at moderate expense of accuracy, it allows measurement of Intellectual Capital for different companies in the same industry

and across industries. The case study result of this research contributes to the development of intellectual capital measurement theory and could have several practical implications. It can be applied by management as a tool to better manage the firms for value creation and can be used as an indicator for selecting investment objectives. The value of intellectual capital can also be incorporated in the annual reports. This can be used by the users of annual reports for effective decision making. ICValue as a financial tool, is a remedy for accurate value from the financial statements without biasness. ICValue hence, is a better measurement model for Intellectual Capital to improve applicability, sustainability and development.