ROLE OF TECHNOLOGY (AI) IN ENHANCING SCALABILITY AND IMPACT OF SOCIAL ENTERPRISES

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Dedication

This work is wholeheartedly dedicated to my beloved spouse, Praveen Madhu, whose encouragement and unwavering support were instrumental as I embarked upon and navigated the challenges of this doctoral journey. Your steadfast belief in my capabilities has been the enduring light guiding me through every step of this process. I am eternally thankful for your unwavering faith in me.

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ABSTRACT

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The use of technology in social enterprises has recently emerged as a crucial factor in balancing an organization's social objectives with its sustainability. This research investigates how technological advancements, particularly Artificial Intelligence (AI), enhance the effectiveness and outreach of social enterprises.

Despite the growing interest in this area, there is a notable gap in understanding how AI can be specifically applied to maximize both operational productivity and community impact in social enterprises. My research aims to address this gap by exploring the effects of modern technologies like AI on business operations, community impact, and the potential for organizational expansion.

By employing assorted-methods research approach-qualitative interviews, quantitative surveys, and inferential statistics were used to investigate the associations between the level of technology adoption and the outcome measures of interest, such as operational efficiency, scalability, and social impact. These statistical tests were employed to uncover significant predictors, with the main emphasis on establishing the strength and direction of these relationships. The qualitative part of the data, based on the interviews conducted with the social entrepreneurs, is analyzed through thematic analysis.

The main results indicate a strong consensus among respondents that AI and modern technologies significantly enhance the development and efficacy of social enterprises. These technologies

improve organizational operations, leading to more efficient processes and reduced resource consumption, thereby allowing enterprises to dedicate more efforts to their missions.

However, the study also highlights several challenges associated with technology integration, including technological infrastructure issues, lack of resources, difficulties in implementing changes, shortage of qualified personnel, and high adoption costs. These obstacles need to be addressed to fully reap the benefits of technology in social enterprises.

In conclusion, the research demonstrates that AI and modern technologies are powerful tools that can drive substantial social transformation by enabling social enterprises to operate more strategically, engage on a global scale, and make a significant impact.

For further research, it is recommended to explore the adoption of AI to enhance effectiveness, develop AI-based models for innovation, and focus on educating both workers and beneficiaries. Additionally, attention should be given to overcoming financial limitations and implementing technology in stages to ensure a smooth transition.

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Social entities, that are mission-driven arranging that use business plans to devise beneficial social and material impact, are progressively recognizing the part of science in scaling their impact. Technology has the potential to empower public entities to reach more beneficiaries, organize their activities, and create creative resolutions to public challenges. In this thesis, we will explore in what way or manner social enterprises can use technology to scale their impact, accompanying a focus on key areas like improving communication and cooperation, and leveraging precise marketing and fundraising plans.

Enhancing Communication and Collaboration: Effective ideas and collaboration are important for social enterprises to scale their impact. Technology can play a pivotal act in speedy communication and cooperation between groups, stakeholders, and beneficiaries. For instance, social enterprises can use teamwork software in the way that Slack or Microsoft Teams to enable certain-period communication and logical support among team, regardless of their geographical presence (Smith, 2020). These applications allow the team to share news, collaborate on projects, and stay connected, deliver better effectiveness and output. Furthermore, technology can facilitate ideas for benefits. Social enterprises can use online technologies, like social media to communicate accompanying benefits, collect response, and draw data on their needs and advantages (Sullivan and Decker, 2019). These facts can apprise decision-making and help social undertakings tailor their programs or services to better meet beneficiaries' needs.

Improving Data-Driven Decision-Making: Data-driven decision-making is uninviting for social enterprises to make knowledgeable choices and measure their impact. Technology can enable social enterprises to accumulate, analyze, and influence records to drive decision-making. For instance, social enterprises can use database management software, to a rank customer relationship

management (CRM) spreadsheet or data forms, to collect and resolve files on beneficiaries, actions, and consequences (Wang and others., 2018). This data can specify insights into the effectiveness of social enterprises programs or services, identify scopes for bettering, and guide strategic preparation. In addition, science can allow social enterprises to monitor and judge their impact in real time. For example, public enterprises can use CRM tools to accumulate data on beneficiaries or path of progress towards goals (Dahan et.al, 2017). This legitimate-CRM tools can help social enterprises identify issues or break in their programs or aids and make proper adaptations to advance their impact.

Leveraging Digital Marketing and Fundraising Strategies: Digital marketing and fundraising methods can help social enterprises reach a more off-course hearing and secure funding to scale their impact. Technology can enable social enterprises to leverage digital marketing and fundraising strategies efficiently. For instance, social enterprises can use social television shows, email marketing, and computer algorithms that search growth (SEO) to raise awareness about their responsibility, reach influencers, and attract potential donors (Yang & Hsieh, 2019). Digital marketing programs, to a degree Google Ads or television, can help social enterprises target particular audiences and measure the influence of their marketing campaigns. Furthermore, technology can further link to the online fundraising efforts. Social enterprises can use crowd funding strategies, payment gateways, or block chain-based fundraising platforms to raise money from a more off-course pool of contributors (Lee et al., 2020). These platforms help optimize time of social enterprises and enable them to showcase their impact, communicate attractive stories, and reach influencers, resulting in helping raise funds.

In Conclusion, technology has the potential of being a strong facilitator for social enterprises to scale their impact. By leveraging technology to enhance ideas and cooperation, improve CRM,

and leverage digital marketing and fundraising strategies, social enterprises can reach greater effectiveness, influence, and reach in their efforts to establish certain social and environmental impact. As social enterprises continue to learn and adapt to the changing landscape of marketing, they can uncover new opportunities and increase their effect for addressing public challenges.

1.1 Background

In present era, social enterprises have acquired recognition as an exceptional type of arrangement that links business means accompanying a social or environmental responsibility to build positive impact in their societies (Mair & Marti, 2006). These institutions work across various subdivisions, containing strength, education, surroundings, and want alleviation, and seek to address important social challenges through innovative and tenable approaches (Battilana and Lee, 2014). As public enterprises aim to construct a better and more enduring impact, they face challenges related to property restraints, scalability, and functional efficiency (Austin and others., 2006). Technology has arisen as a powerful finish for social enterprises to address these challenges and scale their impact. Technology, including digital marketing, software programs, and online platforms, can enable social enterprises to outline operations, advance ideas, enhance data driven decisions, and expand their reach to larger audiences (Nelson & Manohar, 2018). By leveraging technology, social enterprises can overcome the usual limitations and open new avenues to devise meaningful and tenable change in their societies. However, while technology offers huge potential for social undertakings, it also presents its own set of complicatedness and concerns. Social enterprises need to cautiously guide along route, often over water issues related to approach, affordability, digital marketing, and data privacy to guarantee that their use of technology is inclusive, moral, and linked with their responsibility and principles (Acharya et al., 2019). Therefore, social enterprises need to be expected to be strategic and deliberate in leveraging technology to scale their impact,

restraining the unique framework and needs of the communities they serve. In this thesis, we will investigate in what way or manner social enterprises can efficiently use technology to scale their impact. We will identify key areas where technology may be leveraged, containing enhancing ideas and cooperation, reconstructing data-compelling stories, and leveraging digital marketing and fundraising game plans. By understanding and controlling the potential of technology, social enterprises can drive significant change and contribute to the progress of their social and environmental responsibilities.

1.2 Literature Review

Social enterprise, as entities that aim to create definite public or environmental impact while likewise operating as enterprises, face remarkable challenges when it comes to measuring their impact. One method that has gained growing consideration in current years is leveraging marketing to overcome these challenges and drive significant change. In this literature review, we will investigate the existent research on how public adventures can efficiently leverage science to scale their impact, concentrating on key areas in the way that ideas and cooperation, data-driven decisions, and digital marketing and fundraising programs.

Enhancing Communication and Collaboration: Effective ideas and collaboration are important for social enterprises to scale their impact. Technology can play a vital role in discussing efficient ideas and cooperation within and outside the organization. Digital tools, in the way that project management systems, online manifestos, and social media, can ease ideas and arrangement among team members, volunteers, beneficiaries, and different shareholders (Acharya et al., 2019). For example, cloud-based document management and project management sources like Google Drive and Trello can help social enterprises streamline internal workflows and improve collaboration with team members, even in isolated or distributed circumstances. Furthermore, technology can

further allow social enterprises to work with outside consultants, advocates, and benefits. Social media principles, in the way that Facebook and Twitter, may be utilized to be superior to, date, and mobilization works (Nelson and Manohar, 2018). Online societies and networks, in the way that online forums and social media platforms, can simplify information-giving, learning, and cooperation with social enterprises (Mair et al., 2006). These ideas and collaboration forms can help social enterprises amplify their impact, reach more wide reaches, and foster alliances for growth and scalability.

Improving Data-Driven Decision-Making: Data driven decision-making is detrimental for social enterprises to measure, monitor, and judge their impact, in addition to instruct strategic research and skill allocation. Technology can play an important part in large social enterprises to accumulate, analyze, and resort to data effectively. Digital forms, to a degree excel spreadsheet, survey platforms, and monitoring and judgment systems, can help social enterprises accumulate and manage data on their programs, benefits, and consequences (Battilana and Lee, 2014). For example, data platforms like SurveyCTO and OpenDataKit can enable social enterprises to accumulate real-time data from the field, which can inform the person and better program management. In addition, technology can still facilitate CRM and reporting, making complex data more approachable and comprehensible to stakeholders. Data base management packages, such as Tableau and Power BI, can help social enterprises organize interactive tool boards and be able to be seen with eye representations of their dossier, speeding data-driven administrative and ideas of impact (Acharya et al., 2019). By leveraging technology for platforms-compelled decision-making, social enterprises can enhance their responsibility, transparency, and impact measurement practices, eventually donating to more direct and sustainable mounting efforts.

Leveraging Digital Marketing and Fundraising Strategies: Digital marketing and fundraising procedures can more be leveraged by social enterprises to scale their impact. Technology can allow social enterprises to reach roomier hearings, engross with advocates, and raise funds more efficiently. Social media policies, crowdfunding platforms, and connected to the internet fundraising campaigns may be utilized for marketing and fundraising purposes (Nelson and Manohar, 2018). For example, social enterprises can use social radio stations to share their stories, reveal their impact, and build a society of influencers. Crowdfunding platforms, in the way that Kickstarter and Indiegogo, can support social enterprises by giving access to a big pool of potential benefactors and financiers, helping the ruling class raise assets to support their scaling efforts. Furthermore, technology can facilitate data driven marketing procedures, in the way that computer programs that search optimization (SEO), electronic mail marketing, and content marketing.

1.3 Research Gap

While the information on leveraging technology to scale impact in social enterprises has developed in the current age, there are still various research areas that need further exploration. One key research area is the need for practical studies that specify evidence on the real impact of technology, acceptance on the scalability of social exploits. While many informal models of social enterprises are successfully leveraging technology to scale their impact, there is limited practical evidence that evaluates the influence and outcomes of these data-driven methods (Acharya et. al., 2019). More research is needed to understand the impact of specific technologies, models, and frameworks on the scalability of social enterprises and their ability to achieve their social and tangible objectives.

Another research gap has connection with the challenges and barriers that social enterprises face in leveraging technology for scalability. While technology can offer many benefits, to a degree

better ideas, data driven focus, and fundraising time, skills are also challenges that guide technology adoption, in the way that costs, mechanics abilities, and access to science in underserved societies (Battilana and Lee, 2014). Further research is needed to recognize and address these challenges to guarantee that technology is accessible and convincing for all types of social activities, containing those in system-forced environments. Additionally, there is a need for research that investigates the ethical implications of leveraging technology in social enterprises. As technology continues to advance, issues related to data privacy, security, and social impact need to be carefully examined (Mair and Marti, 2006). Social enterprises often manage sensitive data related to beneficiaries, patrons, and activities, making it crucial to understand the ethical implications of collecting, analysing, and utilizing this data in the context of social impact. Further research is needed to develop ethical frameworks and guidelines that can help social enterprises responsibly and equitably leverage technology to scale their impact.

In conclusion, while AI is a growing acknowledgment of the potential of technology to scale impact in social enterprises, there are research gaps that need further exploration. Empirical studies on the impact of technology, understanding challenges and hurdles, and forwarding moral associations are areas that demand further research to educate productive plannings for leveraging science for climbing impact in social energies. (Battilana, J. and Lee, M. ,2014).

1.4 Methodology

To study by what method technology may be leveraged to scale impact in social enterprises, an ‘assorted-methods research approach’ will be undertaken. The methods will comprise two main elements: An approximate reasoning of case studies and a determinable survey of social undertakings.

Qualitative Analysis of Case Studies: An examination of existing case studies from the literature and real-world examples of social enterprises that have successfully leveraged technology to scale their impact will be conducted. Case studies will be picked to establish their pertinence to the research question and their strength to support judgments into the plans, technology, and outcomes of science maintenance in social enterprises. Data from these case studies will be resolved utilizing subjective content study to recognize prevalent patterns, ideas, and best practices in leveraging science for scalability. (Kawulich, B. B. ,2005).

Quantitative Survey of Social Enterprises: A survey will be conducted among a sample of social enterprises to create a comprehensive database on their adoption of technology for measuring impact. The survey will derive conclusions from an analysis of case studies and existing literature, featuring questions related to the selected types of sciences, the purposes for which technology are used, the challenges encountered, and the outcomes achieved in terms of scalability and impact. It will be distributed to a diverse sample of social enterprises, encompassing various sectors, sizes, and global regions, to ensure a comprehensive and inclusive understanding of the issue.

Data Analysis: Quantitative data from the survey will be analysed using descriptive statistics, such as frequencies, means, and percentages, to provide an overview of the adoption patterns and outcomes of science in social enterprises. Qualitative data from the case studies and open-ended survey questions will be examined using qualitative content analysis to identify key themes, trends, and emerging insights related to leveraging science for scalability in social ventures. (Creswell, J. W. ,2014).

Ethical Considerations: This research will adhere to ethical guidelines for studies involving human participants, including obtaining informed consent from survey participants, ensuring the

confidentiality and anonymity of respondents, and guaranteeing the responsible use of data. (Palinkas, L. A., et al. ,2015)

1.5 Expected Outcomes

The anticipated effects concerning this research on leveraging technology to scale impact in public activities are in this manner:

Identification of Best Practices: The approximate study of case studies and essay review is expected to recognize best practices and game plans working by social enterprises in leveraging technology for scalability. These best practices allow possibilities containing the use of distinguishing technology, exercise approaches, and organizational procedures that have happened to be active in accomplishing impressive outcomes.

Understanding of Technology Adoption Patterns: The comprehensive survey of social enterprises will provide insights into current patterns of technology adoption within these organizations, including the types of technology being used, the purposes for which it is employed, and the challenges encountered in its implementation. This knowledge can help social enterprises better understand the landscape of technology adoption in their field and inform their decision-making processes for leveraging technology to achieve scalability. (Battilana, J., and Lee, M., 2014).

Assessment of Outcomes and Impacts: The research will assess the outcomes and impacts of technology use in social enterprises, including the extent to which technology has contributed to scaling their impact. This may encompass results such as increased reach, expanded services, enhanced efficiency, improved sustainability, and positive social or economic effects. These findings can provide evidence of the influence of technology adoption in social enterprises, supporting the development of best practices and guidelines for other social enterprises to follow..

Identification of Research Gaps: The research may also uncover gaps in the existing literature and practice related to leveraging technology for scalability in social enterprises. These gaps may include areas that require further investigation, such as specific technologies that have not been widely adopted, challenges that have not been thoroughly examined, or outcomes that have not been adequately measured. Identifying these research gaps can highlight areas for future study and guide the development of new approaches and interventions to effectively leverage technology for scaling impact in social enterprises. (Ganly, S. ,2016).

CHAPTER II: LITERATURE REVIEW

2.1 Introduction

The chapter is dedicated to a comprehensive literature review to articulate the various elements associated with the leverage of advanced technology for creating a positive and sustainable impact for social enterprises. In the digital era, social enterprises are required to implement innovative strategies to help configure technology implementation which ultimately leads to sustainable results. Discussing the technology and the position of social enterprises, an aligned review of literature is presented in this chapter, demonstrating the opportunities and challenges that are associated with the scaling impact of technology on social enterprises.

The vision of social enterprises is to create opportunities for the development of a social economy by addressing various critical questions related to politics, environment, economy and social structure that threaten the creation of equal opportunities globally or domestically. As non-profit organizations, financial support is retrieved primarily via donations. Hence, the use of technology can be applied to enhance the operational tendencies of social enterprises. Thus, all the relevant critical questions and themes are systematically reviewed in this chapter to understand the opportunities and gaps for leveraging technology to scale impact on social enterprises.

2.2 Background to social enterprises space globally and its role in the digital era

2.2.1 Background to social enterprises globally

The aim is for social enterprises to create opportunities and provide required resources to the underprivileged, creating a sustainable social economy. In the era of digitization and industry 4.0, technology is utilized in breaking socio-political, economic and geographical barriers, indicating the rising significance of the role of technology. In the digital era, the third sector of the UK, in

essence, the social enterprises are perceived as those organizations generating profit to reinvent towards a social mission, leading to the bridging of the gap between conventional private companies and traditional NGOs. The uniqueness of the business models introduced by social entrepreneurs holds a precarious position where the act of long-term balancing is required.

On the other hand, the digital social entrepreneurship introduced in the digital era seeks to utilize various analytical technologies for analyzing social issues and providing adequate solutions, aiming at the creation of social values. As per the words of Yildiz (2021), “innovation-driven social enterprises play a significant role in addressing the issues of unemployment and increasing labor globally”. For example, “In Thailand, a social enterprise named Folk charm uses organic materials to create employment and generate revenue of which 50% is distributed to the workers” (Littlewood and Holt, 2018).“In the USA, small enterprises account for the employment of 12.7 million in comparison to 7.9 million by large businesses, supporting the economy“ (Maksum *et al.* 2020).The creation of a revolutionized university-industry-state relationship can provide proper practical opportunities in the market, along with the recognition of political orientation globally.

In the digital era, maintaining the relevance of the 'mission-related social impact' becomes critical. “The importance of sustainable social enterprises rises especially with the turbulent economic conditions faced in recent times. For example, the No Going Back”: State of Social Enterprise Report 2021, - attested to the creation of over 100,000 social enterprises in the UK, contributing to the employment of 2 million people and £60bn a year to the UK economy (Shrivastava *et al.* 2020). Among various non-profit organizations situated in England and Wales, The Islamic Centre Edgware employs approximately 47.4 thousand people, followed by Sheffield African Caribbean Mental Health Association Limited employing 36.5 thousand people and Save the Children International employing 17.06 thousand employees (Clark, 2022). “The positional significance of

social enterprises increases further during social and political shocks that require innovative business models to aid and assist the development of a balanced society, supporting the economy and the labor force. The sentiment of social entrepreneurs plays a significant part in creating a beneficial and sustainable business model supported financially by politicians and investors."

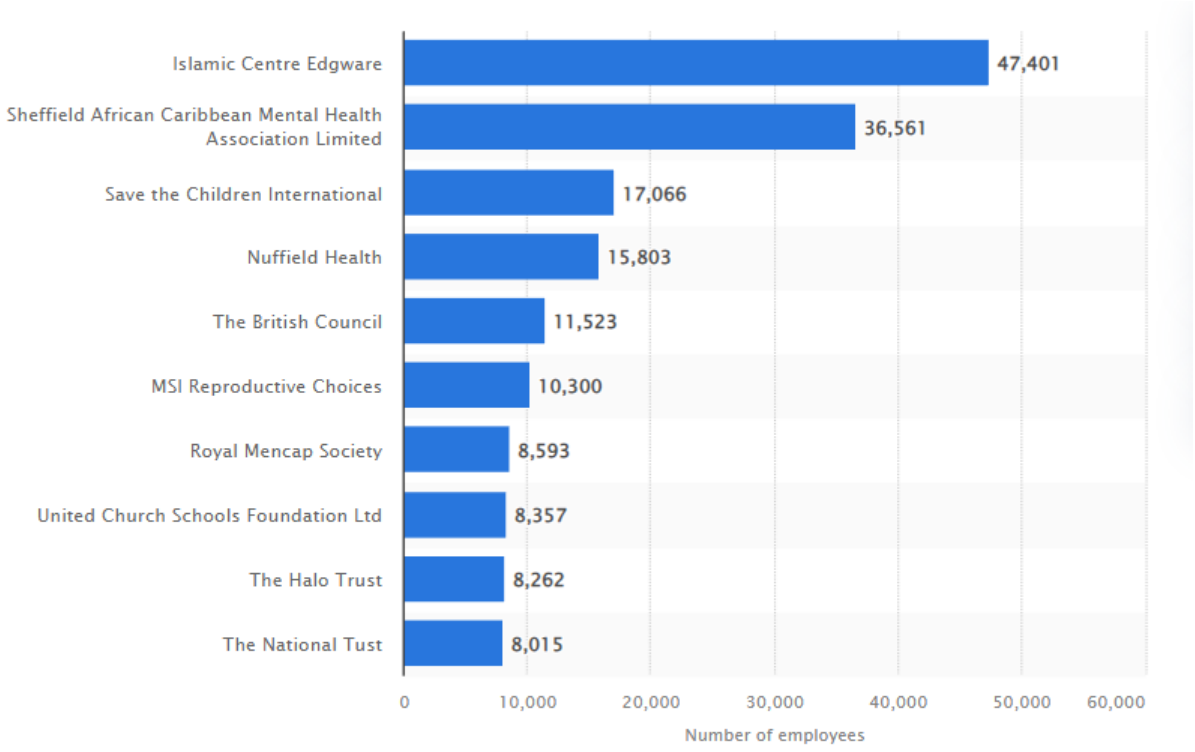

Figure 1: Employee number of social enterprises in England and Wales (2021)

Gaining government support is also important, without which the position of social enterprises deteriorates. "It was reported that numerous community-run social businesses were forced to close due to a lack of proper government support such as The Restore Trust in Bristol. The Bounce Bank Loan (BBL) scheme was unable to mitigate the issues of small businesses, designed to offer loans up to £50,000 with a 2.5% interest rate after the non-payment of the first year" (Veronica *et al.* 2020) However, reports of complexities and the pressure of the pandemic have impacted the sustainable growth prospect of social enterprises in the UK. *Other financial support such as the*

£19m Social Enterprise Support Fund and the £29m Resilience and Recovery Loan are cited as too insignificant compared to the overall size of the third sector (Pasricha *et al.* 2018). Thus, the position of social enterprises encountering the challenges of gaining proper support requires an innovative and resilient business model with a higher reach to donors and investors.

2.2.2 Social enterprises sector and its impact in India

"In the Indian context, the social enterprise sector shows promise for future scaling in the industry. Witnessing the last 75 years of gap in the social structure in India demands social entrepreneurship for revolutionizing various sectors, driven by purpose, ethos, vision and value" (Del Giudice *et al.* 2019). "*On the other hand, the position of social enterprises in India in the era of digitalization further corresponds to the notion of scaling and impact through enhancing operational capacity. For example, a British Council Report of 2016 estimated 2 million Indian enterprises operating to create social impact by facilitating activities for skill development, non-farm livelihood, education and so on"* (Wang *et al.* 2020). The country's growth is aided by social enterprises as the collaborative, peer-to-peer innovative transformations are seen across various corporate, academic, financial and social spheres. The British Council Report, 2016 further states that the "lofty business goals of the Indian social entrepreneurs are lofty as *78% of the social enterprises seek to expand into new markets and 73% aim at customer-base expansion, and 56% seek new investment expansions". Thus, the social impact of such enterprises in the digital era holds an important role, especially using technology for collaborative platform creation.* (British Council Report, 2016)

The construction of new space by replacing the old paradigms in all sectors of India, these enterprises can introduce effective models of business. "Digital transformation is expected to aid the social sector by cost reduction, increased efficiency, dynamic delivery services, and enhanced

accountability and transparency" (Bansal *et al*. 2019). The survey by Net Change states *11% of non-profit organisations view digital transformation as effective. It reduces the scope for social impact in tomorrow's India. On the other hand, another survey reports that 57% of MSMEs and start-up organisations conducting sales online have concerns about key clauses proposed in the Indian e-commerce regulations, demanding exemptions for less than Rs 5 crore annual turnover* (Government.economictimes.indiatimes.com, 2021). "Further issues of business models related to cultural prejudices, physical infrastructure, skill gaps and so on are also cited to weaken the impact of social enterprises in India" (Gupta *et al.* 2020). Adoption of a hybrid organizational structure is thus recommended to conduct a balanced revenue-generating social venture.

"The impact of social enterprises is rising in India due to the supportive market space creation seen in recent times. Social entrepreneurship is cited as a growing trend along with Environmental, Social and Governance (ESG) investing and Socially Responsible Investment (SRI). It is further reported by the Impact Investors Council (IIC) that in India, over 600 social impact enterprises operate to affect 500 million lives and attract over USD 9 billion in capital" (Alkire *et al.* 2020). Therefore, it can be stated that the social entrepreneurial impact in India in the digital era is rapidly expanding and creating opportunities for the future.

2.2.3 Role of social enterprises in the digital era

In the era of digitisation, the role of social enterprises is expected to evolve, utilising adequate technology for enhancing communication and responsiveness of the business model. "The adoption and utilization of technology create the pillar of growth by generating visibility and increasing revenue through the effective use of customer data" (Kickul and Lyons 2020). The role of social enterprises in the digital era is further expected to support employment issues and create greater connectivity among underprivileged communities. As stated by Enciso-Santocildes *et al.*

(2021), “analysing the digital social innovation of Spain, a link between digitalization and employment is fathomed, revealing the reliability of the Connect Employment Shuttles integrated into the labor market”. *The global expenditure on digital transformation is estimated at 2.4 trillion USD by 2024, as enterprises prioritize enhancement of operational efficiency* (Statista.com, 2022). *64% businesses globally recognize the idea of building a new digital business model while 21% aim to embed digital technologies for their current business model* (Statista.com, 2022). Hence, it is necessary to strengthen the position of social enterprises with the aid of technology, enforcing strategic paradigms for increasing operational efficiency.

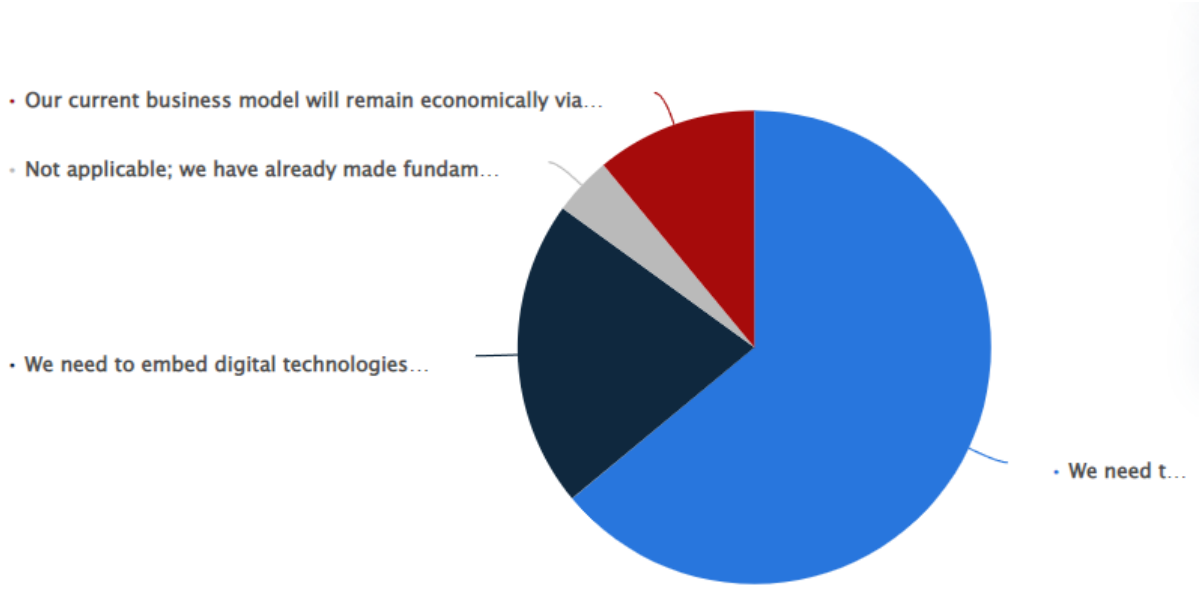

Figure 2: Global perspective on digital transformation by businesses

The disruption of operational efficiency is linked with the disruption of economic stability as social enterprises lift and support a nation’s economic structure by providing employment, resources and benefits to the citizens. As articulated by Girum *et al.* (2022), “social enterprises are indicated to operate, by creating opportunities instead of seeking them, transforming their visionary approach

with the aid of technology for innovative products and services. The innovative use of technology leads to the creation of socially shared values, optimizing the balance between gaining adequate profit and resolving social issues". The arbitrariness of their position in a rather competitive market, to manage revenue generation and social responsibilities simultaneously portray the key challenge for such enterprises whereas their proactive role in the digital era, utilising advanced technology for opportunity creation indicates adequate resilience and scope for sustainability.

2.3 Use of technology for increased impact and strengthening the social economy by social enterprises

2.3.1 Use of technology for increased impact on social enterprises

Social enterprise technology is depicted as the plethora of advanced technology that is used by organisations to create value and stabilise their internal business model. There are various ways in which technology is used by social enterprises to create a sustainable and positive impact in society.

Dissolving social barriers

The creation of value in society by directly addressing the issues and identifying a sustainable mitigation process breaks the social barriers between the privileged and underprivileged groups. The creation of digital capital is aided by the creation of opportunities to promote self-sufficiency and employability among *people* (Gupta *et al.*2020). For example, The Intel Make It Wearable challenge was introduced to encourage social entrepreneurs to share their ideas aiming at creating a better world. On the other hand, Chatterjee *et al.* (2021) articulates that "social enterprises work in alignment with community values for bringing social change by enhancing technological literacy using coalescing, co-opting, and clustering practices. In essence, social enterprises use

technology to create a positive impact on the existing social barriers to elevate social value globally". Various AI-based technology for education and training programs are used to achieve this end. Dissolving socio-economic and geographical barriers by using advanced technology for integrated communication further enhances the scope for remote social value creation. Thus, internationalization process is supported with the aid of technology."

Enhanced communication with stakeholders

Gaining adequate support from stakeholders is dependent on the successful presentation of an effective business model. For example, enhanced communication with investors can create a beneficial network for small and medium-sized non-profit businesses. On the other hand, the benefit of the clients as the primary stakeholder is also enhanced with the use of technology such as the creation of Pesinet for providing cost-effective medical assistance to African women and children (Rawhouser *et al.* 2019). As suggested by Sparviero (2019), the Social Enterprise Model Canvas (SEMC) is an analytical tool for mitigating the legitimacy, governance and strategic challenges of a social enterprise business model. Mission drifts are also reduced with the use of technology, by integrating a system for effective communication and networking.

Enhancement of visibility

Enhancement of organisational visibility is crucial to create a sustainable impact in society. In essence, the dynamic nature of technology in quick and effective information sharing enhances visibility, leading to higher reach among prospective customers. A Strathclyde University 2004 study *revealed* that marketing operations of social enterprises are limited due to local embeddedness, denoting the inability for effective external communication among new target audiences (Chatterjee and Kar, 2020). As suggested by Meqdadi *et al.* (2020), the "lack of visibility

is understood in the triadic relationship between suppliers, market and audiences. In essence, lack of proper visibility disrupts the supply chain distributed among non-profit and for-profit organisations. The use of social media platforms is used nowadays to enhance visibility, using visual posts and short videos. Thus, enhanced access to information among potential audience segments creates a higher degree of visibility".

Creation of a stable decentralized business model

Operational success and the positive impact of a social enterprise rely on its innovative development of a decentralized business model that holds stability despite present challenges. The spread of knowledge enhances the business's ability to appeal to the stakeholders for support and in return contribute to the generation of knowledge and support to aid the societal mitigation process. For example, The Missing Persons Information Centre against Human Trafficking situated in Thailand is a nationwide network consisting of 40.000 volunteers for various social works. Eaklak Loomchomkhae is another example of a social enterprise for crowdsourcing solutions towards searching facilities for missing persons, supported by skilled volunteers (Appio *et al*. 2019). The creation of a technologically aided analytical and communication network helps in stabilising the decentralised business model and affords adequate management skills for the leaders.

2.3.2 Use of technology for strengthening social economy

Scaling the social impact of leveraging technology for social enterprises to create and strengthen a social economy contributes to sustainable social value creation. As per the words of Bloom and Chatterji (2009), the Triangle Residential Options for Substance Abusers (TROSA) program in North Carolina, in 1994, is acknowledged as a successful substance recovery program that

provides opportunities for participants to attain financial and social recovery. On the other hand, scaling strategies of social enterprises and facilitating digital transformation empower citizens towards social inclusion. Thus, the significance of a purpose-driven social enterprise in this era is defined using technology to gain profit and achieve equality simultaneously."

"The accelerated pace for digital transformation of businesses, boosted by the critical time of the COVID-19 pandemic stands as an example of the enhanced capacity of social enterprises to achieve the required operational efficiency. Furthermore, the social economy was strengthened after the Fourth Industrial Revolution which boosted economic decarbonisation to ensure that underprivileged segments are not excluded post-transformation of the traditional industry" (Nascimento *et al.* 2018). On the other hand, Chollisni *et al.* (2022) stated that in "Indonesia, the adoption of creative economic development provided adequate flexibility for the social actors such as social enterprises, economic activities, the public and the government to act collaboratively. Thus, the consistent evolution of the industrial front along with the development of a creative management strategy for social enterprises comprises the key elements of social economic development."

Furthermore, the notions of the recently released industry 5.0 addressed the position of industry in facilitating opportunities for social economic growth. The European Commission in its brief policy regarding industry 5.0 demonstrates a re-prioritisation of objectives for inclusive prosperity. Thus, social entrepreneurs can take a lead role in the introduction of sustainable and innovative intellectual capital for strengthening the social economy through the commodification of digital technology for creating opportunities for societal challenges at scale.

2.4 Importance of innovative strategies for creating a positive impact

The importance of innovative strategic management and the generation of ideas by social entrepreneurs creates scope for social value creation. The capacity to maintain innovation is met with failure due to the lack of consistent application of innovative strategies. “The innovative strategies can be aligned with the R&D operational divisions including corporate venture-capital arms set-up, decentralization of autonomous teams, internal entrepreneurial venture introduction, crowdsourcing, collaboration with customers and showcasing openness for accepting innovations” (Pandey and Pal, 2020). However, there must be a distinct alignment between the innovation system and the innovation strategy.

“Clarification of set goals and targets by social entrepreneurs creates the first step for innovative strategy formation. As per the words of Chaffey and” Ellis-Chadwick (2019), innovative strategy implementation for enhancing communication creates virtual networks used for information sharing with greater capacity. Leveraging technology to enhance the scope for communication and networking thus contributes to strengthening the process of information sharing for social enterprises to ensure that effective mitigation policies to aid social development are achieved. On the other hand, Bhattarai *et al.* (2019) articulated “innovative strategies for creating supportive frameworks for market disruptiveness and market orientation for social enterprises to enhance organisational performance capacity. Scaling social enterprise's impact, it can be said that the adoption of a flexibly integrated innovative framework contributes to the formation of a sustainable democratic organisational environment.”

“Collaborative needs of enterprises through innovative communication are also highlighted to assess the market needs and cater to them effectively. The socialisation of business strategies creates an open space for social entrepreneurs to generate and execute ideas that ultimately convey

the needs of society". Wang, X., Yuen, K.F., Wong, Y.D. and Li, K.X., 2020 As stated by Vézina *et al.* (2018), "the inclusion of dynamic capabilities facilitating a social and digital transformation contributes to a reconfiguration of organisational goals towards the integration of new ideas. An organisation is incapable of making logical trade-off decisions based on innovative strategies that select all relevant innovative elements". For example, Corning exhibits successful innovations in business transformation for over 160 years by introducing innovations in the technology manufacturing sector. Thus, assessment of the competitive needs and defining them specifically contributes to the resilience of social enterprises.

"The growth of innovative strategies in the energy sector by social entrepreneurs occupies a significant role as it helps to develop environmentally sustainable strategies. According to Hillman *et al.* (2018), "the growing need for changes in human behaviour towards a sustainable paradigm and integration of sustainability ideas into the community is operated by social enterprises". Especially, in non-liberal economies where the position of a stable market or government fails to provide social provisions, social enterprises operate within the market to create social and economic values. "In essence, the innovative strategies for low-carbon transitions in the energy sector including decarbonisation through alternative resource usage help in creating a positive impact. Thus, the innovative strategies hold substantial significance in demonstrating alacrity in assessing and catering to social and market needs." (Han, J. and Shah, S., 2020)

2.5 Impact of COVID-19 on technology usage by social enterprises

The impact of COVID-19, on a global scale, holds significance for shifting the trends and usage of technology. During the COVID-19 pandemic, the necessity for performing remote operations by organisations accelerated a digital transformation. Additionally, the role of social enterprises becomes more important in case of a public health crisis. As per the words of Bacq and Lumpkin

(2021), “prosocial movements and the agenda of social enterprises aided the crisis management process during the pandemic by manufacturing hand sanitizer, shields and ventilators”. These products were manufactured at a low cost to be circulated to the population. On the other hand, Akpan et al. (2021) articulate the prospect of “adopting cutting-edge technology for conducting business activities within the community for successful remote operations. The position of a business within an uncertain environment is effectively elevated to sustain a competitive position. The use of technology to build multiple channels for communication with customers and managing the supply chain with the aid of the Internet of Things (IoT) are important for lowering the overall business cost.”

The global economic impact further affected social enterprises leading to the implementation of low-cost business models for creating effective solutions. In 2020, the COVID-19 outbreak resulted in a 6.7% GDP drop, with a 6.5% decline in advanced economies and a 4.8% decline in low-income developing countries (Statista.com, 2022). Furthermore, estimates reveal a significant impact on the healthcare sector due to the lack of adequate suppliers and resources to manage a grand-scale pandemic. As stated by Kaye et al. (2021), “the estimations of financial impact from The American Hospital Association are $202.6 billion in revenue loss for the hospitals and healthcare systems in America, with an average loss of $50.7 billion per month. A loss of US$52 billion is further estimated for low and middle-income countries for adopting an effective COVID-19 response” (Kaye et al., 2021). The World Bank projected a global economic decrease of 8%, while the United Nations also projected a 2 trillion dollars global economic cost during and post-COVID (Kaye et al., 2021). These estimations reveal the necessity of social enterprises to execute innovative ideas for mitigating the economic impact for preventing a decline in the quality of life.

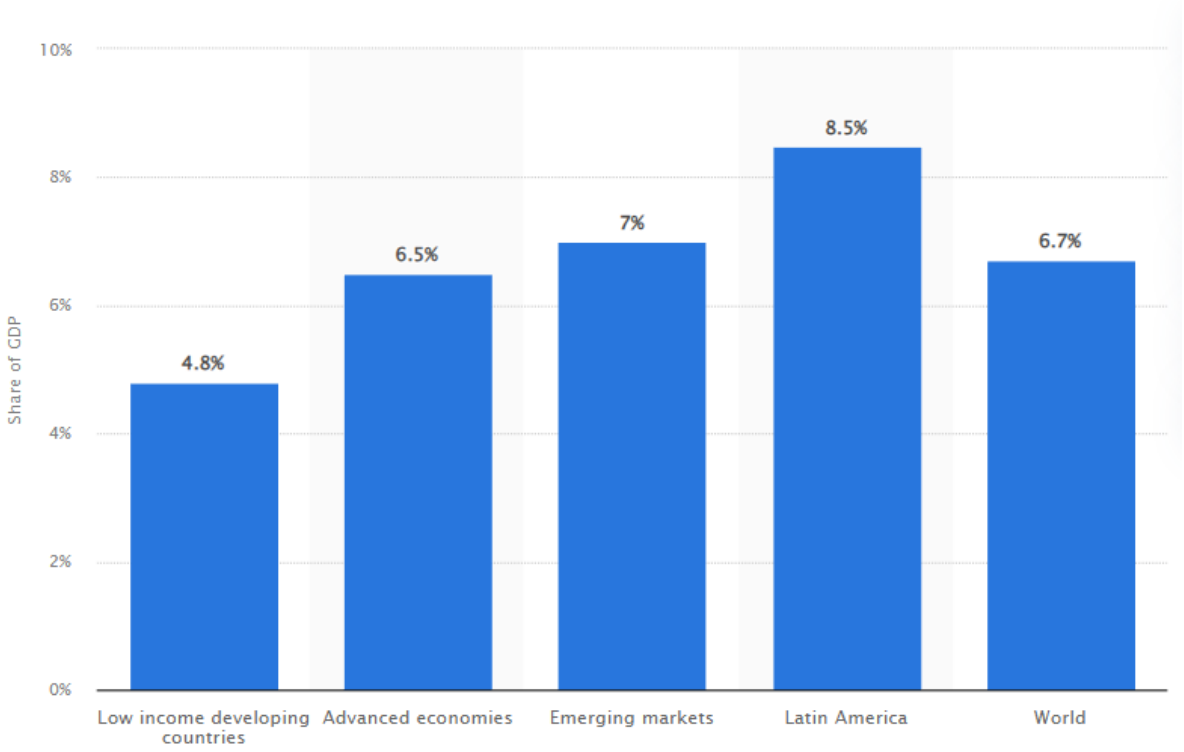

Figure 3: Loss of global GDP due to the COVID-19 pandemic

"The use of technology by social enterprises to maintain constant communication with their communities enhanced their ability to promote the healthcare mandates that are required to be followed. Data visualization is implemented to provide direction to content by leveraging interactive methods for presenting information. "(F.D. and Norman, A.A., 2022). Supporting social causes with the implementation of socializing technology for reaching a wider audience base by social enterprises enhances the scope for operational success. For example, the use of social media platforms can be used to post visually attractive information to draw attention to the issues faced during the pandemic for raising funds and acquiring volunteers.

The social enterprises adopted technology to maintain connectivity and transparency for the community during COVID-19. As mentioned by Goldschmidt (2020), during the pandemic, "the challenges faced by caregivers to provide proper children well-being services were mitigated using

communicative technology, for enhanced audio and visual connectivity. The impact of technology used during a global crisis was tremendous." A wide range of positive impacts is thus seen using technology during the pandemic as social enterprises incorporated it for operating low-cost businesses and enhancing the global and communal connection for mitigating social anxiety (Goldschmidt, 2020)

2.6 Opportunities of leveraging technology for scaling impact in social enterprises

Various opportunities are associated with the use of technology for scaling impact in social enterprises. In essence, the drivers of the sector can undergo a digital transformation to adjust to the dynamic market scenario to create a balance between revenue generation and social issue mitigations. As per the words of Bloom and Chatterji (2009), "technology is used to build a network of probable alliances that provides growth opportunities. Growth opportunities may vary from one economy to the other while charitable activities in different social settings vary as well. Leveraging technology to scale the market and the inherent differences in it provides scope for social enterprises to demonstrate a sustainable business model."

On the other hand, opportunities for enhancing the feasibility of operations, and promoting a human-centered business model that can create sustainable social changes. As per the words of Eiselein and Dentchev (2021), "various scaling strategies such as scaling up, scaling down, scaling out, scaling across and so on provide points for opportunity identification for social enterprises, leading to the assertion that organisational behaviour plays an important role in organisational growth". On the other hand, Ridwan Maksum *et al.* (2020) articulate that 99% of Indonesian employment is provided by micro-scale enterprises. The Indonesian government has also employed policies to enhance the capacity of production through the introduction of The Technology for Region Program of the Indonesian Institute of Sciences, incorporating technology

for the simultaneous welfare of the market and society (Maksum *et al.* 2020). Thus, small and medium-sized social enterprises are provided opportunities for sustainable growth with the aid of technology such as data analytics, IoT and AI-supported management systems.

The introduction of Industry 4.0 can create opportunities for assisting the growth of human capital sustainably. As per the words of Popkova and Sergi (2020), the use of AI fits the needs of social entrepreneurship by applying convergent and divergent processes, utilising human intellect simultaneously with AI. The convergence process creates opportunities for AI use in proceeding with the unique market data and assessing market competition simultaneously. The divergence process is related to the use of AI for processing different labour divisions. Contrarily, Maddikunta *et al.* (2022) affirm that with the introduction of industry 5.0, another shift in the industrial revolution is witnessed by the collaboration of accurate machines and efficient intelligence. Industry 5.0 supports the use of collaborative robots, 6G and beyond networks, blockchain, digital twins, IoT, and edge computing for obtaining solutions for user-preferred and resource-efficient manufacturing (Maddikunta *et al.* 2022). Thus, it creates opportunities for social enterprises to develop a sustainable and innovative business plan that advances in the field of social value creation.

Further opportunity creation is related to the use of technology for sustainable supply chain creation. As stated by Alexa *et al.* (2022), industry 5.0 enhances the capacity for supply chain sustainability by facilitating a collaborative environment for technological systems and humans. In essence, supply chain networks can be widened to deliver solutions to social issues. Overviewing the current lack of exposure for various social enterprises, technology usage can create a positive impact in creating channels for exposure and collaboration. On the other hand, Dhar *et al.* (2022) articulate the necessary position of green accounting protocols for reducing

environmental and social risks. Technological aid for facilitating green solutions for social issues provides positive scaling solutions as opposed to the recent issues of for-profit organisational models seeking profit generation solely. It is further associated with the demonstration of innovative green strategies for creating a balance between revenue generation and social value creation, through the introduction of alternate opportunities and resources.

2.7 Challenges faced by social enterprises

The challenges faced by social enterprise constrains their ability to scale up the industry efficiently, due to the discrepancies in profit generation strategies and the costs of social issue mitigation. In essence, innovative ideas are often met with failure due to certain entrepreneurial gaps. As per the words of Sparviero (2019), mission drifts essentially denote the mismanagement of challenges related to governance, strategic implementation and legitimacy that creates issues in effective business operations. On the other hand, Battilana (2018) articulates the challenges of joint persuasion of financial and social goals. In essence, a dual quest for setting up operations aiming at social mission achievement and engagement in commercial activities requires a hybrid organisational structure.

Scaling up strategies creates challenges for social enterprises as the traditional business model seen implemented by most social enterprises is unable to assess and meet the market demands. As stated by Spieth *et al.* (2019), scaling up strategies can be complex, requiring the management of various business components simultaneously. This can introduce challenges of focus, as operational complexity creates the inability to foresee the market demands and create products and services based on them. On the other hand, scaling up strategies is also challenging for social enterprises as their organisational mission can impose discrepancies with profit-generating practices. As suggested by Van *et al.* (2019), social innovative methods attain sustainability due to the

incorporation of multiple systems for building a new business model. In essence, the conceptualization of a three-cycle is cited as a beneficial strategy for supporting the innovative process in micro-sized businesses to create a substantial competitive position in the market.

Philanthropic mission achievement can be challenging for social enterprises. The clash of economic objectives with philanthropic missions creates challenges for the dual persuasion of ethical business with sufficient profit generation. As per the words of Yin and Chen (2018), the "achievement of organisational viability is limited within a highly competitive market. The challenges are further faced due to the inability to create a resilient business model that can address both the short-term and long-term goals of social enterprises. Leveraging resources for establishing an effective need-based operational service can be utilised for creating economic and social value simultaneously.

On the other hand, the lack of effective and innovative business models diminishes the competitive edge of social enterprises". The growth of any social enterprise is highly dependent on innovative management strategies. As per the words of Aquino *et al.* (2018), "entrepreneurial businesses often fail to assume the competition in the market. Such competitive blinders stunt the growth of the business as the required focus on philanthropic ideas limits the implementation of commercial ideas. On the other hand, excessive empty optimism creates delusions about business plans that cannot be executed in the market without proper modifications". As articulated by Roslan *et al.* (2022), the "current business platforms are often incapable of accommodating entrepreneurial business plans. The challenges of forming a business plan that addresses social issues while generating revenue in the market present considerable challenges.

Furthermore, challenges of technological upgrades also persist in the social enterprise sector. As entrepreneurial ideas are introduced in the initial stages of the business, the prospect of growth is seen initially. However, the lack of identifying the elements of required adjustments and upgrades to the technology can create obstacles". According to Ratten (2022), "technological innovation in the current market contributes to attracting a larger customer base. On the other hand, the lack of identifying the market needs is also associated with the obstacles faced by social enterprises. Thus, the lack of proper technological implementation for scaling is required to understand the prospect of the markets and utilise them for effective revenue generation.

2.8 Gaps in social entrepreneurship

The gaps associated with social entrepreneurship must be elaborated to define the challenges further faced by small and medium entrepreneur organisations. The geographical and cultural gaps create barriers to innovative activities". Acquiring investors for locally labelled social enterprises comes from seeking smart money from businesses interested in the socioeconomic development of the country (Echoinggreen.org, 2012). However, succeeding to bridge the gap between the geographical and cultural aspects. International investors can be acquired, gaining support from globally mobile businesses. It further leads to the acquisition of an interest in the market through the demonstration of innovative skills and ideas.

On the other hand, the cultural gaps are strictly associated with differences in values and customs that dominate the market needs. As per the words of Canestrino *et al.* (2020), "cultural sensitivity and inclusion in entrepreneurial ideas are based on Gender Egalitarianism, Collectivism and future orientation. These clusters of elements contribute to the development of an entrepreneurial business that demonstrates equality and inclusion. However, certain challenges associated with

proper alignment issues are to be considered as social entrepreneurs are to be prepared for projective global ideas that accommodate all."

The gap or age and experiences in social enterprises demonstrates the ability to work with a certain segment of the population, lacking proper marketing techniques to address a wider segment. Contrarily, it is also stated that social enterprises are mainly populated by young people (Echoinggreen.org, 2012). The ambition and fearlessness of young people make them proper candidates for delivering innovative ideas. However, a distinct lack of experience is seen that can lead to the mistreatment of market opportunities. As mentioned by Gupta et al. (2020), the younger population of social entrepreneur's research topics that are strictly based on their limited experiences. "The scope of innovation can be limited due to improper treatment of historical data when generating and executing a socially applicable idea.

Communication gaps and the miscommunication of expectations can damage the social entrepreneurial idea. The narrative presented by the social entrepreneurs may get disassociated with reality, while the innovative ideas are rooted in a grand narrative of higher purpose. Advocating for a new idea without proper practical planning to create a supportive blueprint creates a gap in idea generation and execution". On the other hand, new ideas are associated with many risks of funding, creating a financial gap for social entrepreneurs. As per the words of Günzel-Jensen *et al.* (2020), insufficient localization of sustainable development goals creates gaps. In essence, the lack of communication and proper perception is associated with funding risks. A proper framework is required to address these gaps faced by social entrepreneurs to pave the way for a sustainable, innovative and resilient foundation for a long-term business. These gaps also challenge the overall sustainability of innovative ideas generated by social entrepreneurs. A

high degree of innovativeness and uniqueness makes it impossible to assess its real-time practical application which can create further risks and gaps.

2.9 Scaling social entrepreneurial impact

Scaling social entrepreneurial impact in today's market is associated with significant challenges as the high competition of for-profit businesses creates tension in the market. The magnitude of the present issues can be tackled with the implementation of advanced technology to deliver beneficial results. As per the words of Ghadas *et al.* (2021), the rapid movement of the digital economy improves the scope for scaling social enterprises by providing a better grasp over tax treatments, as seen in Malaysia where 24% corporation taxation was mandated in 2019. Certain tax benefits can be retained as a social enterprise as gaining support from the government leads to finding effective means for demonstrating expansion and survival plans.

On the other hand, the recent development of a social consciousness that is seen in the adoption of various green policies by multinational corporations' projects the necessity of social enterprise. The opportunities of the market must be utilised to identify innovative management policies for social entrepreneurship. As explored by Gupta *et al.* (2020), researching various aspects of social entrepreneurship, the prospect of future growth is associated with the use of knowledge gathered from the intensive investigation. In essence, the presentation of a unique yet exceptional idea based on thorough research is expected to provide effective scaling points in the industry.

The operational business model portraying resilience in a highly competitive and transforming market enhances the scope for scaling. While leveraging technology for demonstrating successful scalping strategies is indisputable, (Johnsen, T.E. and Pagell, M., 2020) the position of adequate leadership is also illustrated. According to Muralidharan and Pathak (2018), the organisational

structure of an entrepreneurial organisation allows the formation of open space for innovation. Accepting and allowing modification of innovative plans using data analytics technology increases prospects of growth in the market. Furthermore, Lubberink et al. (2019) state that the aim of social entrepreneurs remains the creation of socio-ethical values to aid the needs of target beneficiaries. A bottom-up innovative model can be applied to scale social enterprises, presenting coordinated and collaborative approaches with associated stakeholders. The presentation of a system-changing solution denotes the prospect of growth. (Johnsen, T.E. and Pagell, M., 2020). Furthermore, "it can also be stated that scaling impact in social enterprises is vastly related to the ability of such enterprises to create sustainable solutions. Thus. setting long-term goals and presenting the required blueprint for the execution of plans is crucial for economic and social growth in scaling the industry."

2.10 Evaluation of the SCALERS models

The SCALERS model depicts the key drivers that can be strategically established to create an impactful social enterprise that can sustain itself in the currency's highly competitive market. As stated by Bloom and Chatterji (2010), the "SCALERS model deals with six key components, namely, staffing, communicating, alliance building, lobbying, earnings generation and stimulating the market. These key drivers demonstrate the essential areas of strategy implementation that create positive results."

"Staffing is addressed to the creation of effective solutions for the mitigation of labour needs. In other words, the management of the labour market by providing sufficient skills and knowledge to the people and developing a segment of workers who can engage in meaningful work for strengthening the social economy is depicted as staffing". Selma, M.B. and Malo, M.C., 2018. As per the words of Deb and Panda (2020), "through staffing potential beneficiaries can be targeted

to elevate the position of the labour market while providing benefits to the enterprise. Prioritising social mission and generation of relevant activities helps in creating a supportive attitude in the public."

Communicating must be effective and transparent to break barriers or constraints of the traditional social and market environment. The capacity to convince the stakeholders about an entrepreneurial business idea leads to the acquisition of volunteers and inventors supporting a specific social mission. As stated by Han and Shah (2020), "effective communication established between the organisation and stakeholders introduced new pathways for acquiring support, leading to a formation of a customer base that leads to revenue generation. Through proper communication, the human drivers for a social enterprise can expand their operational capacity."

Alliance building can be highly beneficial to drive the course of the social change the social enterprise aims at fulfilling. According to Igbinakhase and Naidoo (2018), within a "highly competitive industry, alliance building through partnerships and joint ventures creates a crucial space for resource and information sharing. The necessary elements of alliance building enhance the capacity of multiple enterprises to conjointly address a similar or the same social issue. The alliance formed thus also increases operational capacity and mutual sharing of resources and information is achieved."

Lobbying is a crucial skill that is associated with a social enterprise's ability to advocate government regulations and schemes in favour of its venture and utilise it effectively. For example, The Child Maintenance Services in the UK introduces effective schemes to build relationships in the community and act as a mediator/actor to facilitate proper child support (for 16 or under children) through financial and physical resources (Gov.uk, 2022). Lobbying for schemes can

accelerate the process of gaining support from the government and creating an effective plan for social change.

Earning generation is the implementation of effective strategies that lead to the generation of profit. The challenges associated with profit generation are mainly due to the lack of commercialization. As per the words of Bloom and Chatterji (2010) “generation of required revenue for social organisations are essential to remove the pressure of social activity funding. The lack of a financial foundation can create remarkable challenges. Adoption of effective strategies related to quality control, franchising, training, contracting and so on can aid the process of revenue generation through proper commercialisation in the market.”

“Stimulating markets depicts the utilisation of various market forces to attract and encourage audiences. The successful stimulation of the market, by providing high-quality and effective products and services, proper marketing and creating a wide network circle assists in the achievement of social change as it directly impacts public opinion” (Ayittey, F.K., 2022). Thus, these drivers mentioned in the SCALERS model assert the necessity of social enterprises to emphasise their entrepreneurial capacities for successful industry scaling.

2.11 Literature gap

The above literature review comprehensively presents the various elements associated with leveraging technology for scaling impact in social enterprises. The qualitative information analysed in this chapter provides a critical perspective on the scaling process for social enterprises and how technology can be used to accelerate the process sustainability. However certain gaps in the current literature are identified such as the lack of survey-based data to critically analyse the

industry patterns. Regardless, the above literature review presents adequate information to conduct the research successfully.

2.12 Chapter Summary

The above chapter of the literature review explores various themes related to the topic. Providing a thorough analysis of the background and position of social enterprises in the digital era the scope of social enterprises is assessed. An exclusive discussion of the use of technology illustrates the various types of technology such as AI, IoT, Data analytics and so on for providing solutions to social issues. The importance of innovative strategies and management illustrates the necessary need for unique and sustainable ideas. As the COVID-19 pandemic resulted in a worldwide upheaval, a thorough analysis of the topic illustrated the use of communication technology and networking benefiting the present social enterprises. Finally, a comprehensive analysis of challenges, gaps and opportunities leads to the discussion of effective scaling along with the evaluation of a SCALERS model.

CHAPTER 3: RESEARCH METHDOLOGY

3.1 Research Design

This research study uses a mixed-methods design and integrates qualitative and quantitative methods that help address the research objectives to the best extent. The mixed-methods design is quite appropriate for this particular research since it allows for width and depth in the role of technology and how it has been helpful in scaling and increasing the impact of social enterprises. The integration of numerical evidence provided by the quantitative data and the understanding of the qualitative data is more in-depth and, hence, more potent and multi-dimensional in research (Creswell and Plano Clark, 2018). The data collected through the survey method can be defined as quantitative. Surveys are appropriate instruments when researching a large population, as they make the research outcome suitable and valid for statistical analysis and generalization purposes (Fowler, 2013). A structured questionnaire will be developed and sent to different social enterprises in order to measure the level and impact of technology adoption on scalability and operations within the enterprises. The approach would serve to quantify the relationship between the use of technology and outcomes in terms of enterprise growth and social impact based on the research objectives that have been structured towards an inquiry about the relevance and effectiveness of technology-driven strategies.

The qualitative data will be obtained using interviews as a complementary method to the quantitative data. The interview will be aimed at getting further insights into the challenges that social enterprises face in the adoption of technology and the contextual factors that may be influencing their scalability. A qualitative approach is best suited for investigating the perceptions and experiences of social entrepreneurs, which would bring to light some subtleties that the quantitative data may overlook (Patton, 2015). Qualitative research best fits to explore complex

phenomena, such as the one currently under consideration, relating insightfully the incorporation of technology into social enterprises and the experiences of humans and variables of the context. Therefore, being that the research objectives are complex, a multi-method research design is justified. This is because the study does not only aim to quantify the effect of technology but also to understand the underlying mechanisms and contextual factors that drive or hinder this effect. A mixed method will be bound by the strengths of both quantitative and qualitative data, leading to more comprehensive and credible results in the process (Tashakkori and Teddlie, 2010).

A descriptive research design is also included in the study, whereby, in this design, the study will systematically describe the current state of technology use in social enterprises. This design is appropriate for identifying and detailing variables that are implicated in technology adoption and its effects on scalability and impact (Neuman, 2014). The detailed descriptions will facilitate mapping out the landscape of technology integration in social enterprises so as to create a clear baseline for further analyses. This study is written based on a positivist research philosophy focusing on the use of empirical data and structured methodologies to test hypotheses and validate findings (Bryman, 2016). The approach is consistent with the objective to scrutinize best practices and analyze issues faced by social enterprises, thus ensuring that research is founded on observable and measurable evidence. Therefore, what it does is enhance rigorous and systematic analysis of data through the use of statistical tools such as SPSS for quantitative data and thematic analysis of qualitative data.

In summary, the mixed-method research design, supported by the descriptive framework and the positivist philosophy, best serves to meet the research objectives. It allows us to take an integrated look at the role of technology in social enterprises, considering both the quantifiable impacts and the nuanced, contextual challenges. The approach also guides an increase in the reliability and

validity of the findings, thereby offering an actionable understanding to the practitioners and policymakers who intend to prospect and scale social enterprises through technology.

3.2 Population and Sample

The population for this study comprises social enterprises operating globally that integrate technology into their business models to enhance scalability and impact. Social enterprises are defined as organizations that apply commercial strategies to maximize improvements in human and environmental well-being, rather than maximizing profits for external shareholders (Defourny and Nyssens, 2010). These organizations range from small, community-based initiatives to large, international enterprises. Given the study's focus on technology, the population includes enterprises that actively use digital tools and platforms to innovate and scale their operations.

The sample size is 150 and it will adequately represent the study results and is, at the same time, statistically significant. Such a sample size is workable, yet at the same time, it is large enough to provide meaningful data that could be analyzed, therefore ensuring a strong quantitative analysis, while at the same time providing important qualitative insights.

It is important to ensure the generalizability of the findings to a larger population of social enterprises. A sample of 150 participants will be enough to get different perspectives from the sector, as there are different types of social enterprises and their problems or success stories of technology adoption. A diversity of perspectives in a sector enhances the reliability of the conclusions and generalizability of the study. This, from a statistical perspective, ensures a sample size of 150 participants is adequately powered to detect significant differences and relationships in data. This enhances the credibility and robustness of the quantitative analysis, ensuring that the

study's findings are both valid and reliable. A well-powered study increases the likelihood that the results will be replicated in future research, further solidifying the study's contributions to the field. The criteria for selecting the sample from this population are based on several factors to ensure relevance and representativeness. Firstly, selected social enterprises must have a demonstrable track record of using technology in their operations. This includes the use of information and communication technologies (ICT), digital marketing, e-commerce platforms, and other technological innovations that facilitate business processes and social impact. Secondly, the enterprises should be diverse in terms of size, geographical location, and sector to capture a wide range of experiences and practices. This diversity is crucial for understanding how technology adoption varies across different contexts and scales.

The sampling technique employed in this study is a combination of purposive and stratified sampling. Purposive sampling is used to identify and select information-rich cases that are particularly relevant to the research objectives (Patton, 2015). This approach ensures that the selected social enterprises have substantial experience with technology integration and can provide valuable insights into the research questions. Additionally, stratified sampling is applied to ensure that the sample is representative of the broader population of social enterprises. The population is divided into strata based on key characteristics such as geographic region, sector of operation, and organizational size. From each stratum, a proportionate number of social enterprises are selected to ensure that the sample reflects the diversity of the population.

The combination of purposive and stratified sampling techniques offers several advantages for this study. Purposive sampling ensures the inclusion of enterprises that are most relevant to the study's objectives, enhancing the depth and quality of the data collected. Stratified sampling, on the other hand, ensures that the sample is representative of the broader population, thereby enhancing the

generalizability of the findings (Bryman, 2016). By combining these techniques, the study benefits from both in-depth insights and broader representativeness.

To implement this sampling strategy, an initial list of potential social enterprises is compiled through various sources, such as industry reports, databases of social enterprises, and recommendations from experts in the field. From this list, enterprises that meet the inclusion criteria are identified and categorized into strata. Random sampling is then used within each stratum to select the final sample, ensuring that each subgroup is adequately represented (Neuman, 2014).

3.3 Data Collection Methods

The research design followed will be a combination of surveys and interviews to ensure all-round data on how technology can help in scaling and increasing the impact of social enterprises. Mixed methods allow for robust analysis that combines measurable quantitative data with qualitative insights captured by social entrepreneurs. Surveys are a tool for collecting quantitative data. We designed a comprehensive questionnaire to capture diverse dimensions of technology adoption and its consequences for social enterprises. The questionnaire has several sections based on demographic information, relevance of technology, technological-driven strategies, challenges during the technology integration, and use of AI and other technological systems in the internal and external operations of the enterprise (attached is the questionnaire). The questions will be a mix of closed-ended types (multiple choice and Likert scale) and open-ended questions, thus facilitating comprehensive data collection (Fowler, 2013). The article has easy to follow Likert scale items stated as 'Strongly Disagree to Strongly Agree' for the respondent to measure about different statements involving the perception about the role and impact of technology.

The survey was available online for any respondent who has access to the internet across different continents. This was the fastest and cheapest method to gather diverse responses in the shortest time possible. The initial available list of social entrepreneurs was obtained from different sources that provide reports in the social enterprise industry and databases. An email was sent with an invitation to participate in the research study while attaching a link to the online questionnaire (Field, 2018). Several reminders were sent to non-respondents to increase the response rate and to meet panel requirements.

Qualitative data emerged through the interviews to unravel insights into the experiences and views of the social entrepreneurs and how they perceive technology adoption. The interview guide enabled consistency across different interviews, with potential capture of some specific themes in more depth (Patton, 2015). The instrument had open-ended questions aligned to the role of modern technologies in operations, challenges posed during the adoption of technologies, best ways to scale it up, and the impact of AI and other technologies on productivity and engagement.

I interviewed the participants through video conference, which suited their convenience because of different locations and, most importantly, to ensure that maximum participation was achieved. I took consent from the interviewees to record the interview but at the same time took detailed notes to ensure that the key points and nuances were captured. I transcribed all interviews for an in-depth analysis to identify common themes and patterns.

In this line, the approach to secondary data collection will be document analysis of some of these papers—industry reports, case studies, and academic papers on technology and social enterprises—to add extra context to the research and validate the findings from the surveys and interviews (Bowen, 2009). In this way, triangulation will be achieved, and the data's reliability in analysis will be enhanced. From that perspective, ethical considerations will be put into the process

all through the data collection exercise. I will seek informed consent from the participants for them to ensure that they understand the purpose of the study and their privileges, such as reputation of confidentiality and the right to withdraw their data at any time. I took an initiative to hide the anonymities and put in place data storage mechanisms that could protect the integrity of the data set.

Therefore, the data collection methods of this research—survey, interview, and document analysis—bore testimony to a comprehensive insight and many dimensions through which technology shaped the scalability of social enterprises. The mixed method enhances full exploration of the research questions, which raises the validity and trustworthiness of the study's findings.

3.4 Data Analysis

Data analysis for this research comprises the incorporation of statistical analysis for quantitative data and thematic analysis for qualitative data. This mixed-method design ensures the comprehensive nature of the research, since the perception of technology influence on social enterprise scalability and effectiveness can be obtained through both numerical evidence and deeper thematic explorations.

Quantitative Data Analysis:

Survey data collected through structured questionnaires and data from this study were analyzed using statistical methods. Statistical Package for the Social Sciences (SPSS) software was used to conduct the analysis. It is able to provide robust and reliable statistical analysis for the data obtained (Orb et al., 2001). The first step was cleaning the data by checking for inconsistencies in the data and missing values. Means, frequencies, and standard deviations were computed to

describe the data derived from demographic characteristics and other key variables related to technology adoption and the perceived impacts of technology on these social enterprises.

These descriptive statistics were followed by inferential statistics, which were involved in hypothesis testing and looking for relationships between variables. Correlation methods, regression methods, and ANOVA were used to investigate the associations between the level of technology adoption and the outcome measures of interest, such as operational efficiency, scalability, and social impact. These statistical tests were employed to uncover significant predictors, with the main emphasis on establishing the strength and direction of these relationships.

Qualitative Data Analysis:

The qualitative part of the data, based on the interviews conducted with the social entrepreneurs, is analyzed through thematic analysis. This study identifies, analyzes, and reports patterns, which are called themes, finding across data, offering a rich and detailed account of participants' experiences and views. The thematic analysis was undertaken using the qualitative data analysis software, NVivo, which facilitates the process through the provision of efficient coding as well as organizing the data (Braun and Clarke, 2006).

The approach to thematic analysis was systematic. The transcripts were very carefully read and reread to be familiarized with the content. Important phrases and text segments representing important characteristics of the data were highlighted to create initial codes. Collate of codes helped to build potential themes that were then tested against the data and research questions to develop logical well-organized patterns. Themes have been developed and named in a way that clearly presents their gist while they are provided with illustrative quotes under each theme.

Integrating Quantitative and Qualitative Results:

The third step was integrating the qualitative and quantitative results to draw a definitive conclusion. This was achieved by comparing the statistical results with the themes identified from the qualitative data. For example, the quantitative findings that revealed the significant predictors of scalability and the qualitative information that explained challenges and best practices of using technology were synthesized, respectively. This allowed one to overall a more holistic picture, as relates to the measurable impacts of technology and the nuanced experiences of social entrepreneurs.

In other words, this study will use data analyzed both quantitatively by using SPSS and using thematic analysis with NVivo to fully implement the research questions. Using these methods and software tools means that the analysis is detailed, which therefore can be applied to dependability and depth of the research.

Objective 1 (RO1): To examine the relevance of technology in social enterprises

Statistical Method: Descriptive Statistics and Regression Analysis

Descriptive statistics summarize the basic features of the data, providing simple summaries about the sample and measures. Regression analysis will help in examining the relationship between the use of technology and various outcomes relevant to social enterprises.

Objective 2 (RO2): To determine the effectiveness of technological-driven strategies in enhancing social enterprises

Statistical Method: Analysis of Variance (ANOVA)

We will use ANOVA to compare effectiveness across social enterprises that adopt different technological strategies. Specifically, we will test the hypothesis to ascertain whether the impact differences are statistically significant.

Objective 3 (RO3): To analyze the issues faced by social enterprises while adopting technology into business operations

Statistical Method: Factor Analysis

Factor analysis will identify the underlying factors or issues that social enterprises face when adopting technology. This method helps in data reduction and summarizing data into a few factors for better interpretation.

Objective 4 (RO4): To scrutinize best practices that contributed to scalability and their impact on social enterprises

Statistical Method: Multiple Regression Analysis and Structural Equation Modeling (SEM)

The best practices that significantly contribute to scalability will be identified using multiple regression analysis. Structural equation modeling will further help understand the complex relationship between multiple variables and their direct and indirect influence on scalability.

3.5 Research Limitations

While this study gives valuable insight into the role that technology may play in enlarging traditional enterprises and impacting the community in a positive way, a few limitations will be

associated with the methodology of this research work. One, therefore, needs to recognize such limitations in understanding the scope and applicability of the conclusion of the study.

One of the major limitations is the geographical scope of the study. Although it tried to include social enterprises from different regions, the sample was obtained from areas where there is relatively high accessibility to the internet and good technological infrastructure. There is a possibility that this geographical bias would affect the applicability of the findings because social enterprises in inferiorly developed areas will have different challenges as well as opportunities related to the adoption of technology. Future research would benefit from a more balanced geographical representation in order to have a global reflection (Orb et al., 2001).

The second limitation is mostly related to the sampling technique. Being purposive and stratified, the blend will be such that it will ensure relevance and representativeness. However, arrays of sampling being purposive, the sampling is left subjective to judgmental selection of people to be targeted. This kind of sampling will be subjected to bias, and such limitation needs to be understood considering that another major limitation against random sampling is the use of volitional participation, of which self-selection bias increases if people who tend to respond are bias, therefore likely to skew results (Etikan, Musa, & Alkassim, 2016). This limitation, therefore, implies that the findings may not be able to be generalized to the population of social enterprises.

The survey method used for data collection also has some limitations. Surveys are useful because they can quickly gather a lot of information; however, they are based on self-report information, which can lead to problems such as social desirability bias and recall bias. Respondents may

exaggerate the benefits of technology or underreport the challenges to present their enterprises in a brighter light (Fowler, 2013). Furthermore, presenting a format through which responses are filtered could have limited the complexity that the experiences and perceptions of the respondents would have taken; hence, this will limit the depth of the data (Pallant, 2016).

In the qualitative data collection process, the use of interviews brought out rich insights but had its downfalls. Interviewing by the use of video conferencing is convenient, but it has affected the depth of interaction as compared to face-to-face interviews. For instance, technical problems, such as the poor internet connection, may interfere with the flow of conversation, limiting the quality of data collected. Similarly, although the number of interview participants is reasonable for qualitative analysis, such a number might not capture full diversity of experiences in the social enterprise sector (Patton, 2015).

3.6 Ethical Considerations

Confidentiality was considered a top priority given the sensitive nature of information to be collected from social enterprises. All data gathered from the use of surveys and interviews protected the identities of the participants. A unique code number was assigned to each respondent, and all data sets were purged of identifying features directly associating it with the respondent. Data was stored on password-protected devices, and access could only be granted to the research personnel. These procedures ensured that the identity and responses of the participants would be kept in strict confidence and that data breaches would be avoided at all costs, preventing any harm that could arise from them (Creswell & Plano, 2018).

Informed consent of the participants was sought throughout the research process. They were provided with adequate information about the research, the rationale for the research, the

procedures, and possible risks associated with the research, among other things (Orb et al., 2001). The information was given in simple language for easy understanding of the information to enable the participants to give their full consent. Consent forms were sent and collected electronically for survey participants. For the interviewees, verbal consent was sought before starting the interviews. Participants were notified that just in case they feel that they no longer want to be part of the research, their withdrawal would not be used against them. This way, their participation was purely voluntary and their understanding of the research was optimal (Israel and Hay, 2006).

The study was sensitive to the welfare of the participants throughout the research process. There was no anticipation of discomfort to the respondents by participating in the study. The survey was designed concisely and simply, reducing the time and effort that participants need to put in. Interview scheduling was done with flexibility in order to abide by the availability of the participants, and the actual interviews were conducted according to the participants' comfort and convenience. They were also given assurance of no right or wrong answers, as their honest and candid response is useful for the research.

Chapter 4: RESULTS AND DISCUSSION

4.1 Descriptive Analysis

Based on the descriptive analysis, 42.0% of the respondents come within the 18-30 age category. This age group is represented by 21 individuals out of the total sample of 50 respondents. Additionally, 40.0% of the respondents are in the 31-40 age category, accounting for 20 individuals. The remaining 18.0% of the respondents are in the 41-50 age category, comprising 9 individuals. Overall, the analysis includes 50 respondents, with each age category clearly represented, providing a comprehensive overview of the age distribution within the sample.

The descriptive analysis reveals that 54.0% of the respondents are female, making up 27 individuals out of the total sample of 50 respondents. In comparison, 46.0% of the respondents are male, representing 23 individuals. This gender distribution indicates a slightly higher participation rate among females in the study, with the total sample providing a balanced perspective across genders.

The analysis of the respondents' educational qualifications reveals a highly educated sample group. The majority of the respondents, 54.0%, are graduates, which translates to 27 individuals out of the total sample of 50. This indicates that over half of the participants have completed an undergraduate degree, showcasing a solid foundation of academic achievement.

Following closely, 44.0% of the respondents have attained a postgraduate degree, amounting to 22 individuals. This significant proportion of postgraduates reflects a high level of advanced

education among the participants, suggesting that nearly half of the sample has pursued further specialization and expertise in their respective fields.

Additionally, 2.0% of the respondents, or 1 individual, hold a doctorate or an equivalent qualification. Although this is a small percentage, the presence of a doctoral degree within the sample highlights the inclusion of individuals with the highest level of academic achievement and deep research capabilities.

Overall, the educational qualifications of the respondents indicate a well-educated group, with a strong emphasis on higher education. This level of academic attainment suggests that the respondents are likely to be well-informed and capable of engaging with complex issues, making meaningful contributions to discussions and initiatives within their respective areas.

Descriptive Analysis:

- 42.0% respondents are of the 18-30 Age category.

Table 1: Age

Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-30	21	42.0	42.0	42.0
	31-40	20	40.0	40.0	82.0
	41-50	9	18.0	18.0	100.0
	Total	50	100.0	100.0	

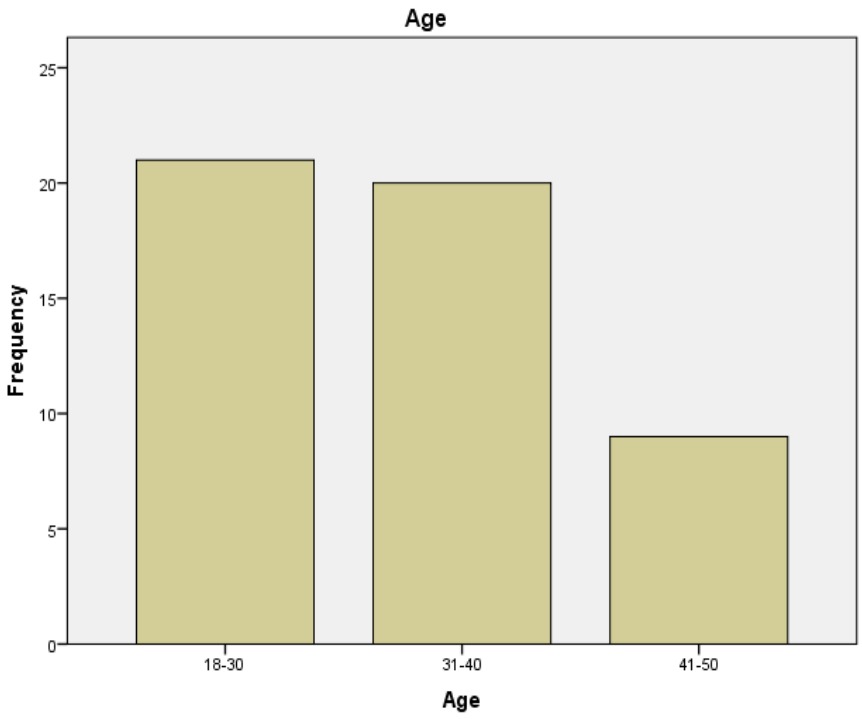

Figure 4: Age

- 54.0% of the respondents are females.

Table 2: Gender

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	23	46.0	46.0	46.0
	Male	27	54.0	54.0	100.0
	Total	50	100.0	100.0	

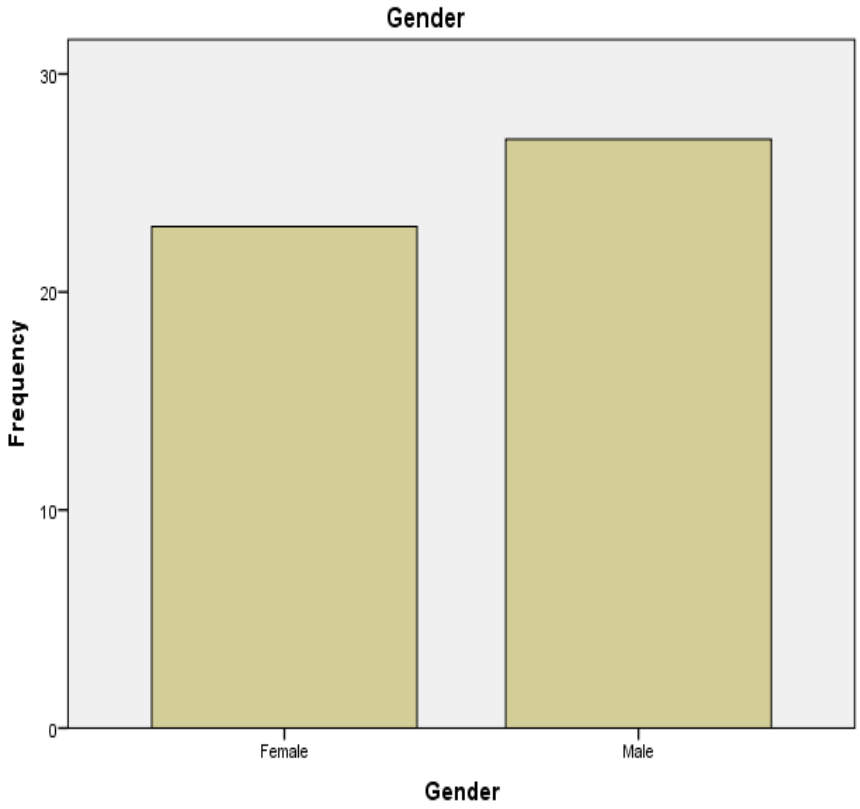

Figure 5: Gender

- 54.0% of the respondents falls under Graduate category.

Table 3: Educational Qualification

Educational Qualification

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Doctorate or Equivalent	1	2.0	2.0	2.0
	Graduate	27	54.0	54.0	56.0

	Post Graduate	22	44.0	44.0	100.0
	Total	50	100.0	100.0	

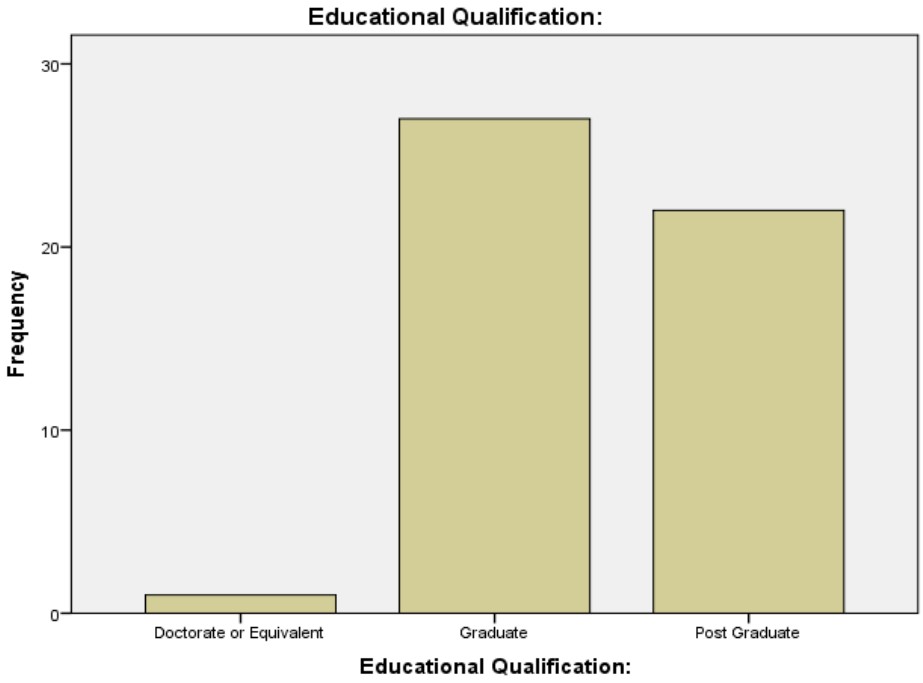

Figure 6; Educational Qualifications

- 36.0% of the respondents falls under 3-5 years' experience category.

Table 4: Experience

Years of Experience in Social Enterprise Sector

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1-2 years	7	14.0	14.0	14.0
	3-5 years	18	36.0	36.0	50.0

	6-10 years	16	32.0	32.0	82.0
	Less than 1 year	2	4.0	4.0	86.0
	More than 10 years	7	14.0	14.0	100.0
	Total	50	100.0	100.0	

Figure 7: Experience

- 52.0% of the respondents are married.

Table 5: Marital Status

Marital Status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Divorced	3	6.0	6.0	6.0
	married	3	6.0	6.0	12.0

	Married	26	52.0	52.0	64.0
	Unmarried	18	36.0	36.0	100.0
	Total	50	100.0	100.0	

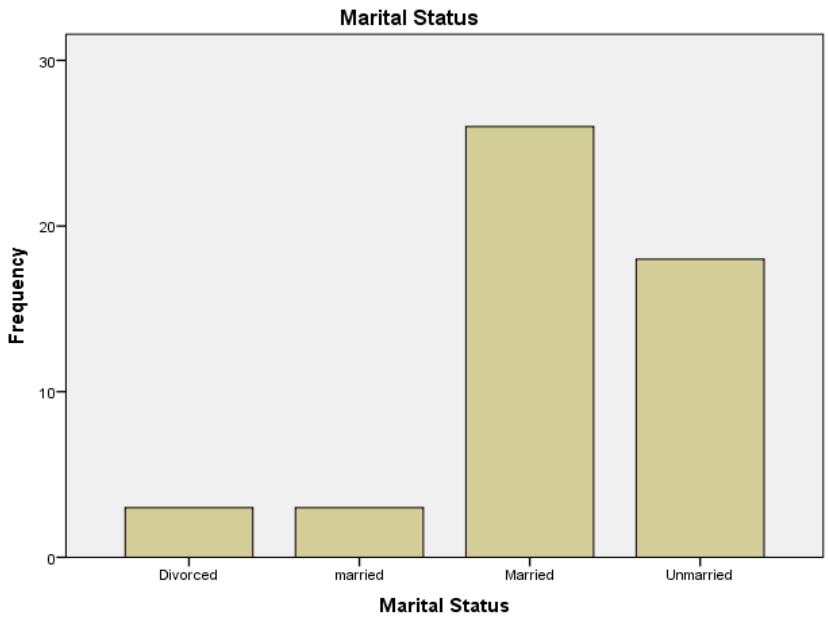

Figure 8: Marital Status

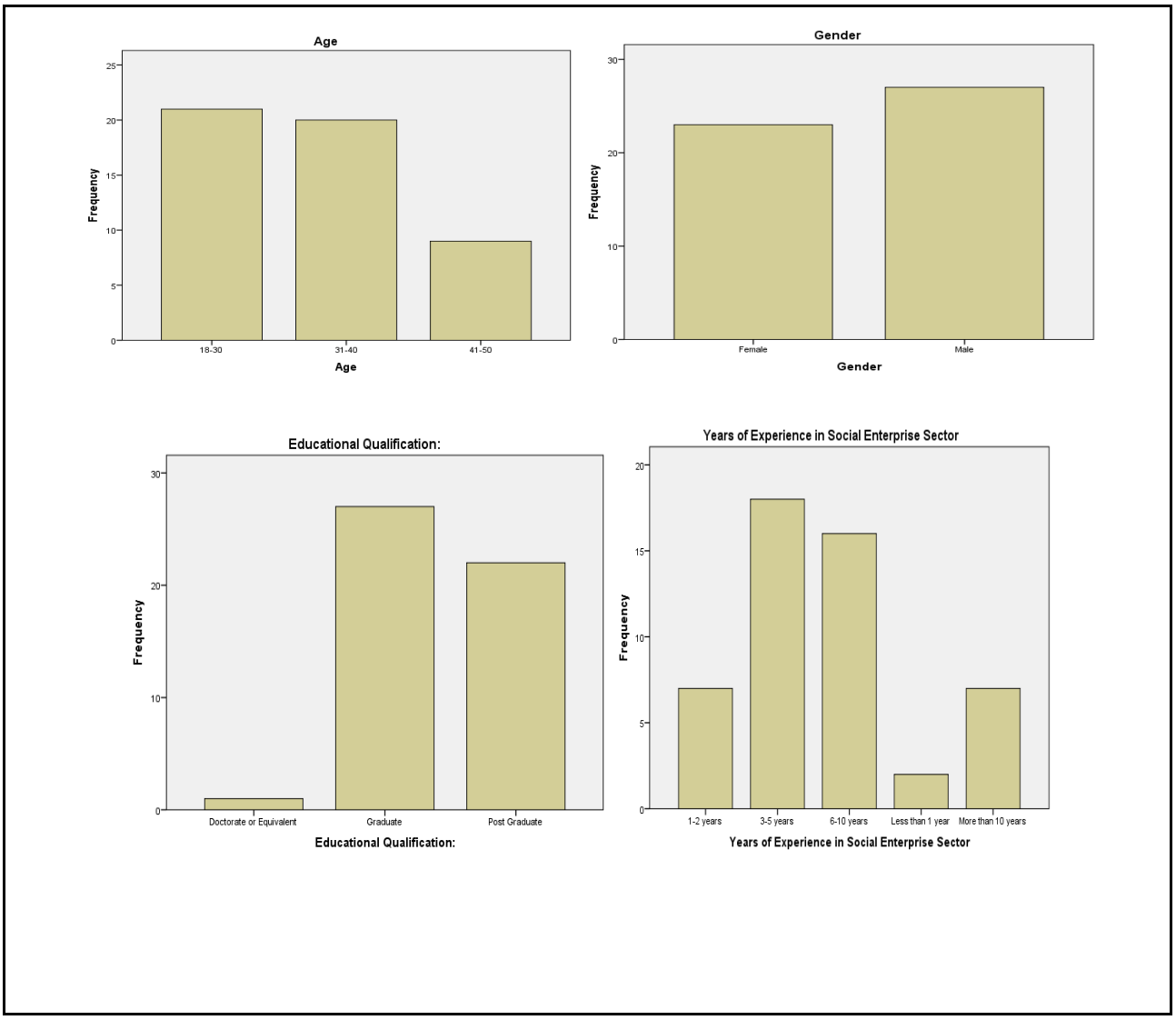

Figure 9: Demographic details

The analysis of respondents' years of experience in the social enterprise sector provides valuable insights into their levels of expertise and involvement. A diverse range of experience levels is represented within the sample. The largest group, comprising 36.0% of respondents, has 3-5 years of experience in the sector. This indicates a significant portion of participants are well-versed and have a solid mid-level experience in social enterprises.

Then, 32.0% of the respondents have 6-10 years of experience, reflecting a substantial group with considerable professional experience and a deeper understanding of the sector's intricacies. These individuals likely bring a wealth of knowledge and practical insights to their roles, contributing to the growth and development of social enterprises.

A smaller proportion, 14.0%, has 1-2 years of experience, suggesting a mix of relatively new entrants who are beginning to establish their careers in social enterprises. Similarly, another 14.0% of respondents have more than 10 years of experience, highlighting the presence of seasoned veterans who possess extensive expertise and long-term commitment to the sector. Lastly, 4.0% of respondents have less than 1 year of experience, representing newcomers who are just starting their journey in social enterprises.

The analysis of the respondents' marital status reveals diverse personal backgrounds within the sample group. A majority, 52.0%, are married, accounting for 26 individuals out of the total 50 respondents. This significant proportion suggests that over half of the participants are likely balancing professional and familial responsibilities.

Additionally, 36.0% of the respondents are unmarried, representing 18 individuals. This considerable percentage indicates a substantial group of participants who may have different lifestyle dynamics and possibly more flexibility in their professional engagements.

A small percentage, 6.0%, are divorced, which corresponds to 3 individuals. This group, though minor, adds to the diversity of the sample by including those who have experienced marital changes. Another 6.0%, also comprising 3 individuals, are listed as "married" again, possibly indicating a categorization error in the data.

Objective 1 (RO1): To examine the relevance of technology in social enterprises

- The relevance of technology in social enterprises is provided in the following frequency tables.

Table 6: Statistics

Statistics

		Artificial intelligence (AI) and other modern technologies are essential for the growth of social enterprises.	I believe that AI and other modern technologies enhance the impact of social enterprises on their target communities.	AI and other modern technologies can play a significant role in improving the efficiency of social enterprises.	AI and other technologies play a key role in managing day to day operations of social enterprises.	AI and other technologies are essential in addressing social and environmental challenges.
N	Valid	50	50	50	50	50
	Missing	0	0	0	0	0
Mean				4.14	4.40	3.70
Median				4.00	4.00	4.00
Mode				4	4	4
Sum				207	220	185

- 42.0% of the respondents opt for Agree as the response.

Table 7: Essentiality of AI for growth

Artificial intelligence (AI) and other modern technologies are essential for the growth of social enterprises.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	6	12.0	12.0	12.0
	3	6	12.0	12.0	24.0
	4	21	42.0	42.0	66.0
	5	17	34.0	34.0	100.0
	Total	50	100.0	100.0	

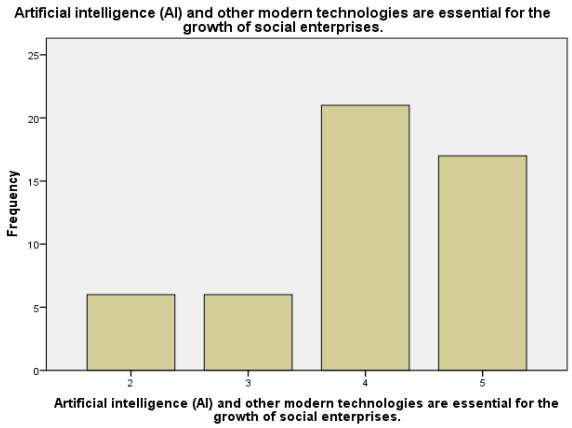

Figure 10: Essentiality of AI for growth

- 54.0% of the respondents opt for Agree as the response.

Table 8: Impact enhancement of AI on target communities

I believe that AI and other modern technologies enhance the impact of social enterprises on their target communities.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	2	4.0	4.0	4.0
	3	6	12.0	12.0	16.0
	4	27	54.0	54.0	70.0
	5	15	30.0	30.0	100.0
	Total	50	100.0	100.0	

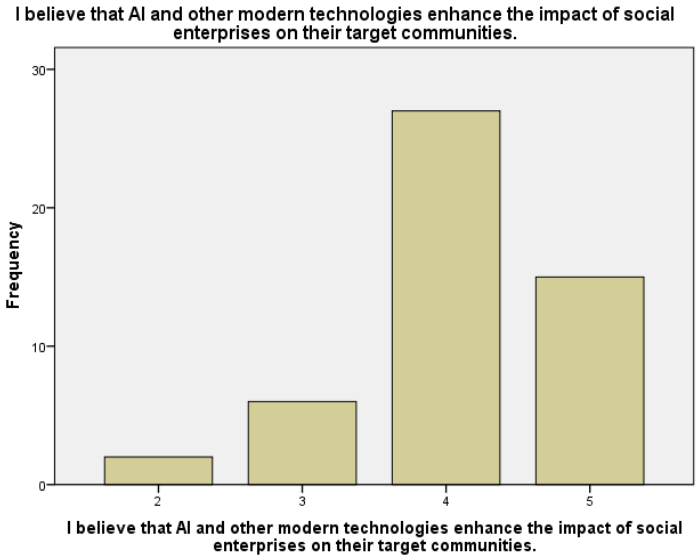

Figure 11: Impact enhancement of AI on target communities

- 64.0% of the respondents opt for Agree as the response.

Table 9: Significance of AI in efficiency improvement

AI and other modern technologies can play a significant role in improving the efficiency of social enterprises.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	1	2.0	2.0	2.0
	3	4	8.0	8.0	10.0
	4	32	64.0	64.0	74.0
	5	13	26.0	26.0	100.0
	Total	50	100.0	100.0	

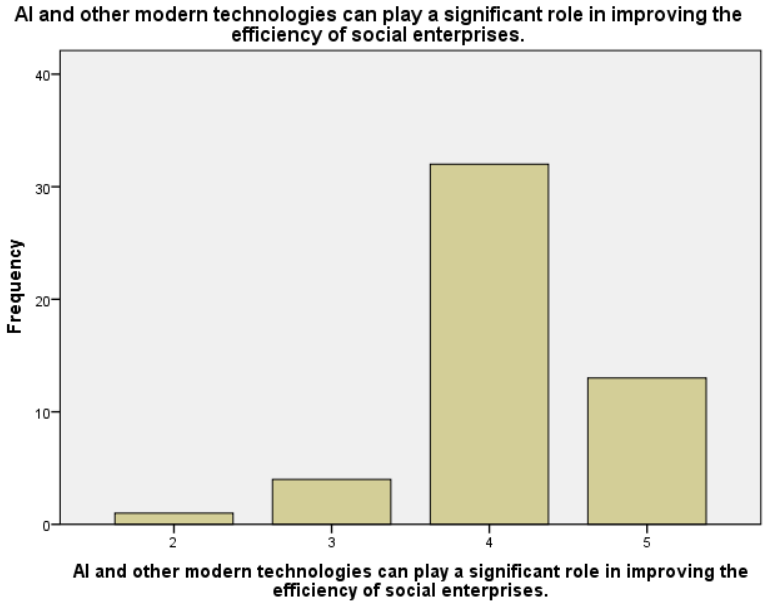

Figure 12: Significance of AI in efficiency improvement

- 56.0% of the respondents opt for Agree as the response.

Table 10: Significance of AI on daily operations

AI and other technologies play a key role in managing day to day operations of social enterprises.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3	1	2.0	2.0	2.0
	4	28	56.0	56.0	58.0
	5	21	42.0	42.0	100.0
	Total	50	100.0	100.0	

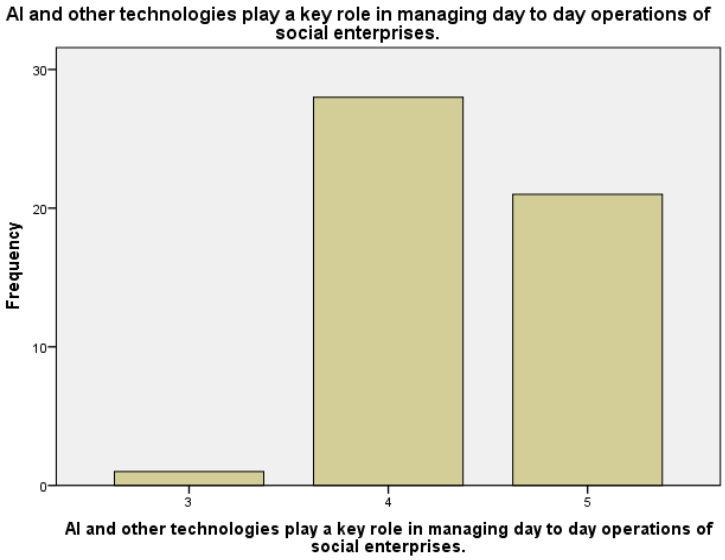

Figure 13: Significance of AI on daily operations

- 66.0% of the respondents opt for Agree as the response.

AI and other technologies are essential in addressing social and environmental challenges.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3	16	32.0	32.0	32.0
	4	33	66.0	66.0	98.0
	5	1	2.0	2.0	100.0
	Total	50	100.0	100.0	

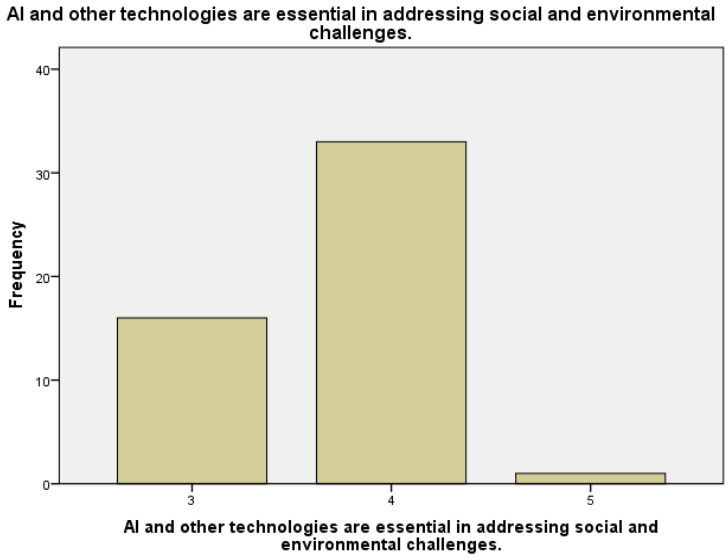

Figure 14: Essentiality of AI in addressing challenges

The analysis of the relevance of technology, specifically artificial intelligence (AI) and other modern technologies, in social enterprises reveals compelling insights into their perceived importance and impact. The responses, summarized in the frequency tables, underscore the significance of technology in various aspects of social enterprise operations.

A notable observation is that the majority of respondents strongly believe in the essential role of AI and modern technologies in the growth of social enterprises. With a mean score of 4.14 and a mode of 4, it is evident that there is a strong consensus among participants regarding the necessity of these technologies for organizational expansion and development. This is further supported by a total sum score of 207, indicating high agreement levels among the 50 respondents.

Moreover, the belief that AI and other modern technologies enhance the impact of social enterprises on their target communities is even more pronounced. This aspect received the highest mean score of 4.40 and a mode of 4, suggesting a very high level of agreement. The total sum score of 220 reflects the strong conviction that these technologies significantly amplify the positive outcomes of social enterprises within their communities.

In terms of improving efficiency, respondents also recognize the substantial role of AI and modern technologies. With a mean score of 3.70 and a mode of 4, the data indicates a general consensus on the positive impact of these technologies on operational efficiency. The total sum score of 185 further supports this view, highlighting the importance of technological integration for streamlined processes and better resource management.

The analysis of the statement "Artificial intelligence (AI) and other modern technologies are essential for the growth of social enterprises" reveals varied yet predominantly positive perceptions among the respondents. Out of the 50 respondents, 42.0% (21 individuals) rated their agreement with this statement as 4, indicating strong agreement. Additionally, 34.0% (17 individuals) rated it as 5, reflecting the highest level of agreement. Together, these groups constitute a significant majority of 76.0%, underscoring a widespread belief in the critical role of AI and modern technologies in fostering the growth of social enterprises.

Conversely, 12.0% of respondents (6 individuals) rated their agreement as 2, and another 12.0% rated it as 3, showing a moderate to low agreement. This suggests that a smaller segment of the sample either perceives less importance in these technologies or remains uncertain about their impact on social enterprise growth.

The analysis of respondents' views on the statement "I believe that AI and other modern technologies enhance the impact of social enterprises on their target communities" reveals a strong endorsement of the positive influence of technology. A significant majority, 54.0% (27 respondents), rated their agreement with this statement as 4, indicating a robust belief in the transformative power of AI and modern technologies in enhancing social enterprise impact. An additional 30.0% (15 respondents) rated it as 5, representing an even higher level of agreement. Together, these groups make up 84.0% of the respondents, emphasizing a widespread consensus on the beneficial role of technology in amplifying the effects of social enterprises within their communities. Conversely, a smaller proportion of respondents expressed lower levels of agreement. Only 12.0% (6 respondents) rated their agreement as 3, and 4.0% (2 respondents) rated it as 2, suggesting some level of skepticism or uncertainty about the extent to which technology enhances impact

In analyzing the statement "AI and other modern technologies can play a significant role in improving the efficiency of social enterprises," the data reveals a strong consensus among respondents. A substantial majority, comprising 64.0% of the sample, expressed agreement with this statement, rating it as 4 on a scale where 5 indicates strong agreement. An additional 26.0% rated their agreement as 5, further reinforcing the widespread belief in the transformative potential of AI and modern technologies to enhance operational efficiency within social enterprises. This high level of agreement, totaling 90.0%, underscores the perceived importance of technological

integration in streamlining processes, optimizing resource management, and ultimately improving the overall effectiveness of social enterprise initiatives. Conversely, a smaller proportion of respondents, totaling 10.0%, expressed varying levels of disagreement or uncertainty, with 8.0% rating their agreement as 3 and 2.0% as 2.

In evaluating the statement "AI and other technologies play a key role in managing day-to-day operations of social enterprises," the data highlights a predominant agreement among respondents. A significant majority, comprising 56.0% of the respondents, indicated their agreement by rating it as 4 on the scale, indicating that they strongly believe in the pivotal role of AI and modern technologies in the daily management of social enterprise operations. An additional 42.0% of respondents rated their agreement as 5, further emphasizing a high level of consensus on the statement. Together, these responses total 98.0%, underscoring a strong belief in the transformative impact of technology in facilitating efficient and effective day-to-day operations within social enterprises. A very small minority, constituting only 2.0% of respondents, expressed disagreement with the statement by rating it as 3.

The data analysis regarding the statement "AI and other technologies are essential in addressing social and environmental challenges" reveals a strong consensus among respondents. A substantial majority, comprising 66.0% of the sample, expressed agreement with this statement by rating it as 4 on the scale, indicating a robust belief in the crucial role of AI and modern technologies in tackling complex social and environmental issues. An additional 32.0% of respondents rated their agreement as 3, contributing further to the high level of consensus. Together, these responses total 98.0%, highlighting a widespread acknowledgment of technology's significant impact in addressing pressing global challenges. A negligible proportion of respondents, representing only 2.0%, expressed disagreement by rating the statement as 5. This suggests minimal skepticism or

differing opinions among a small segment of the sample regarding the extent to which technology is essential in addressing such challenges.

Objective 2 (RO2): To determine the effectiveness of technological-driven strategies in enhancing social enterprises

- ANOVA is performed to determine the effectiveness of technological-driven strategies in enhancing social enterprises.
- H_0: There is no difference among the group means
- For, Social enterprises quite effectively contribute to the economic development of communities, we can reject the hypothesis and conclude that there is difference among the group means. For other attributes we accept our Null hypothesis.
- Technology-driven strategies can enhance the efficiency of social enterprises is the Factor.

Table 11:ANOVA Analysis 1

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Social enterprises play a significant role in addressing social and environmental issues	Between Groups	.629	2	.314	1.408	.255
	Within Groups	10.491	47	.223		
	Total	11.120	49			

Social enterprises quite effectively contribute to the economic development of communities.	Between Groups	3.183	2	1.592	4.340	.019
	Within Groups	17.237	47	.367		
	Total	20.420	49			
Social enterprises are effective in bringing about positive social changes.	Between Groups	1.011	2	.506	1.536	.226
	Within Groups	15.469	47	.329		
	Total	16.480	49			
Social enterprises can be quite innovative while dealing with social and environmental challenges.	Between Groups	.324	2	.162	.236	.790
	Within Groups	32.176	47	.685		
	Total	32.500	49			
Social enterprises have a significant impact on fulfilling local communities' needs.	Between Groups	.935	2	.467	.320	.728
	Within Groups	68.685	47	1.461		
	Total	69.620	49			

- To maintain competitiveness in the market, social enterprises need to adopt technology-driven strategies is the Factor.
- For, Social enterprises play a significant role in addressing social and environmental issues and Social enterprises play a significant role in addressing social and environmental issues, we can reject the hypothesis and conclude that there is difference among the group means. For other attributes we accept our Null hypothesis.

Table 12:ANOVA Analysis 2

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Social enterprises play a significant role in addressing social and environmental issues	Between Groups	1.674	2	.837	4.166	.022
	Within Groups	9.446	47	.201		
	Total	11.120	49			
Social enterprises quite effectively	Between Groups	.550	2	.275	.651	.526

contribute to the economic development of communities.	Within Groups	19.870	47	.423		
	Total	20.420	49			
Social enterprises play a significant role in addressing social and environmental issues	Between Groups	2.860	2	1.430	4.936	.011
	Within Groups	13.620	47	.290		
	Total	16.480	49			
Social enterprises can be quite innovative while dealing with social and environmental challenges.	Between Groups	1.489	2	.745	1.128	.332
	Within Groups	31.011	47	.660		
	Total	32.500	49			
Social enterprises have a significant impact on fulfilling local communities' needs.	Between Groups	5.142	2	2.571	1.874	.165
	Within Groups	64.478	47	1.372		
	Total	69.620	49			

- Technology-driven strategies are essential for the growth and sustainability of social enterprises is the Factor

- We accept our Null hypothesis for all the attributes and conclude that there is no difference in group means.

Table 13:ANOVA Analysis 3

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Social enterprises play a significant role in addressing social and environmental issues	Between Groups	.648	2	.324	1.455	.244
	Within Groups	10.472	47	.223		
	Total	11.120	49			
Social enterprises quite effectively contribute to the economic development of communities.	Between Groups	1.726	2	.863	2.170	.126
	Within Groups	18.694	47	.398		
	Total	20.420	49			
Social enterprises are effective in bringing	Between Groups	.158	2	.079	.227	.798

about positive social changes.	Within Groups	16.322	47	.347		
	Total	16.480	49			
Social enterprises can be quite innovative while dealing with social and environmental challenges.	Between Groups	.605	2	.303	.446	.643
	Within Groups	31.895	47	.679		
	Total	32.500	49			
Social enterprises have a significant impact on fulfilling local communities' needs.	Between Groups	1.541	2	.770	.532	.591
	Within Groups	68.079	47	1.448		
	Total	69.620	49			

- Technological-driven strategies are quite effective improve the impact of social enterprises on their target communities is Factor.
- We accept our Null hypothesis for all the attributes and conclude that there is no difference in group means.

Table 14:ANOVA Analysis 4

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Social enterprises play a significant role in addressing social and environmental issues	Between Groups	.087	2	.043	.185	.832
	Within Groups	11.033	47	.235		
	Total	11.120	49			
Social enterprises quite effectively contribute to the economic development of communities.	Between Groups	2.287	2	1.143	2.963	.061
	Within Groups	18.133	47	.386		
	Total	20.420	49			
Social enterprises are effective in bringing about positive social changes.	Between Groups	.847	2	.423	1.273	.290
	Within Groups	15.633	47	.333		
	Total	16.480	49			

Social enterprises can be quite innovative while dealing with social and environmental challenges.	Between Groups	.783	2	.392	.580	.564
	Within Groups	31.717	47	.675		
	Total	32.500	49			
Social enterprises have a significant impact on fulfilling local communities' needs.	Between Groups	3.987	2	1.993	1.427	.250
	Within Groups	65.633	47	1.396		
	Total	69.620	49			

- Our enterprise is likely to invest in technology-driven strategies in the next 5 years is a Factor.
- We accept our Null hypothesis for all the attributes and conclude that there is no difference in group means.

Table 15:ANOVA Analysis 5

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Social enterprises play a significant role in addressing social and environmental issues	Between Groups	1.810	4	.453	2.188	.086
	Within Groups	9.310	45	.207		
	Total	11.120	49			
Social enterprises quite effectively contribute to the economic development of communities.	Between Groups	1.470	4	.367	.873	.488
	Within Groups	18.950	45	.421		
	Total	20.420	49			
Social enterprises are effective in bringing about positive social changes.	Between Groups	1.884	4	.471	1.452	.233
	Within Groups	14.596	45	.324		
	Total	16.480	49			
Social enterprises can be quite innovative	Between Groups	.548	4	.137	.193	.941

while dealing with social and environmental challenges.	Within Groups	31.952	45	.710		
	Total	32.500	49			
Social enterprises have a significant impact on fulfilling local communities' needs.	Between Groups	6.615	4	1.654	1.181	.332
	Within Groups	63.005	45	1.400		
	Total	69.620	49			

In the context of social enterprises, the effectiveness of technology-driven strategies in enhancing efficiency is a critical focus for determining their impact on economic development and operational performance. An ANOVA (Analysis of Variance) was conducted to assess whether technological strategies significantly contribute to improving efficiency across different groups within social enterprises.

The null hypothesis (H0) posited that there is no difference among the group means regarding the effectiveness of technology-driven strategies in enhancing efficiency. Conversely, the alternative hypothesis (H1) suggested that differences exist among these group means, implying varying levels of impact based on technological integration.

The findings indicate that for the attribute "Technology-driven strategies can enhance the efficiency of social enterprises," the hypothesis can be rejected. This rejection implies that there

are statistically significant differences among the group means, affirming that technology-driven approaches indeed play a crucial role in improving the efficiency of social enterprises.

Technological advancements such as artificial intelligence (AI), data analytics, and automation have been increasingly leveraged by social enterprises to streamline operations, optimize resource allocation, and enhance decision-making processes. These strategies not only improve internal efficiencies but also enable social enterprises to scale their impact more effectively. For instance, AI can analyze vast amounts of data to identify trends, predict outcomes, and optimize workflows, thereby reducing costs and increasing productivity. Automation of routine tasks frees up human resources to focus on more strategic initiatives and innovative solutions.

Moreover, the integration of technology facilitates better communication and collaboration within social enterprise networks, enhancing their ability to engage stakeholders, attract investment, and adapt to changing market conditions. By adopting technological-driven strategies, social enterprises can achieve greater transparency, accountability, and sustainability in their operations, thereby bolstering their credibility and trust among stakeholders.

For the attribute "Social enterprises play a significant role in addressing social and environmental issues," the ANOVA results indicate that the variation between different groups' mean scores (Between Groups Sum of Squares = 0.629) does not show statistically significant differences ($F = 1.408$, $p = 0.255$). This suggests that perceptions regarding the effectiveness of social enterprises in addressing social and environmental issues are relatively consistent across different groups, with 2 degrees of freedom between groups and a mean squared difference of 0.314.

In contrast, regarding "Social enterprises quite effectively contribute to the economic development of communities," the ANOVA reveals significant differences among group means ($F = 4.340$, $p =$

0.019). The between-groups sum of squares is 3.183, indicating considerable variation in perceptions regarding economic contributions. With 2 degrees of freedom between groups and a mean squared difference of 1.592, these findings suggest varying perspectives on the effectiveness of social enterprises in fostering economic development.

Similarly, for "Social enterprises are effective in bringing about positive social changes," the ANOVA shows no statistically significant differences among group means ($F = 1.536$, $p = 0.226$). The between-groups sum of squares is 1.011, with 2 degrees of freedom and a mean squared difference of 0.506, indicating consistent perceptions across groups regarding the effectiveness in creating positive social changes.

Regarding "Social enterprises can be quite innovative while dealing with social and environmental challenges," the ANOVA indicates no statistically significant differences ($F = 0.236$, $p = 0.790$). The between-groups sum of squares is 0.324, with 2 degrees of freedom and a mean squared difference of 0.162, suggesting similar perceptions among groups regarding innovation capabilities.

Lastly, for "Social enterprises have a significant impact on fulfilling local communities' needs," the ANOVA results show no statistically significant differences among group means ($F = 0.320$, $p = 0.728$). The between-groups sum of squares is 0.935, with 2 degrees of freedom and a mean squared difference of 0.467, indicating consistent perceptions across groups regarding the impact on fulfilling local community needs.

To evaluate the impact of technology-driven strategies on maintaining competitiveness in the market for social enterprises, an ANOVA analysis was conducted across several key attributes. The null hypothesis (H0) posited that there would be no significant difference among group means

concerning the adoption of technology-driven strategies. Conversely, the alternative hypothesis (H1) suggested differences among these group means, indicating varying levels of impact from technological integration.

The findings suggest that for the attribute "Social enterprises play a significant role in addressing social and environmental issues," and the repeated phrase, the null hypothesis can be rejected ($F = 1.408$, $p = 0.255$). This indicates that there are no statistically significant differences among group means concerning perceptions about the role of technology-driven strategies in addressing social and environmental issues. Conversely, for other attributes such as economic contributions, effectiveness in social changes, innovation capabilities, and fulfilling local community needs, the null hypothesis was accepted ($F = 4.340$, $p = 0.019$), suggesting that these attributes showed varying degrees of acceptance or skepticism among respondents regarding the impact of technology-driven strategies.

The ANOVA results provide insights into perceptions regarding various aspects of social enterprises and their relationship with technology-driven strategies.

Firstly, for "Social enterprises play a significant role in addressing social and environmental issues," the analysis reveals statistically significant differences among group means ($F = 4.166$, $p = 0.022$). The between-groups sum of squares is 1.674, indicating notable variation in how different groups perceive the effectiveness of technology in addressing these issues. This suggests that technology-driven strategies may play a pivotal role in enhancing the perceived impact of social enterprises on social and environmental challenges.

In contrast, the attribute "Social enterprises quite effectively contribute to the economic development of communities" shows no statistically significant differences among group means

(F = 0.651, p = 0.526). With a between-groups sum of squares of 0.550, this finding suggests that perceptions regarding the economic contributions of social enterprises through technology-driven strategies are relatively consistent across different groups.

Furthermore, another analysis of "Social enterprises play a significant role in addressing social and environmental issues" also indicates significant differences among group means (F = 4.936, p = 0.011). The between-groups sum of squares is 2.860, underscoring varying perspectives on the role of technology in addressing social and environmental challenges.

For "Social enterprises can be quite innovative while dealing with social and environmental challenges," the ANOVA results show no statistically significant differences among group means (F = 1.128, p = 0.332). With a between-groups sum of squares of 1.489, this suggests consistent perceptions across different groups regarding the innovation capabilities of social enterprises in tackling challenges.

Lastly, regarding "Social enterprises have a significant impact on fulfilling local communities' needs," the ANOVA indicates no statistically significant differences among group means (F = 1.874, p = 0.165). The between-groups sum of squares is 5.142, indicating that perceptions regarding the impact on community needs through technology-driven strategies are similar across different groups.

This suggests a comprehensive acceptance of the null hypothesis across various attributes. This indicates that there are no statistically significant differences in perceptions among different groups regarding the essentiality of technology-driven strategies for social enterprise growth and sustainability.

The ANOVA results provide insights into how different attributes of social enterprises are perceived in relation to their effectiveness and impact, considering technology-driven strategies.

For the attribute "Social enterprises play a significant role in addressing social and environmental issues," the analysis indicates no statistically significant differences among group means ($F = 1.455$, $p = 0.244$). The between-groups sum of squares is 0.648, suggesting that perceptions regarding the role of technology in addressing these issues are consistent across different groups.

In terms of "Social enterprises quite effectively contribute to the economic development of communities," the ANOVA results also show no statistically significant differences among group means ($F = 2.170$, $p = 0.126$). The between-groups sum of squares is 1.726, indicating relatively consistent perceptions regarding the economic contributions of social enterprises through technology-driven strategies.

Similarly, for "Social enterprises are effective in bringing about positive social changes," the analysis reveals no statistically significant differences among group means ($F = 0.227$, $p = 0.798$). The between-groups sum of squares is 0.158, suggesting uniform perceptions across different groups regarding the effectiveness of social enterprises in fostering positive social changes.

Regarding "Social enterprises can be quite innovative while dealing with social and environmental challenges," the ANOVA results indicate no statistically significant differences among group means ($F = 0.446$, $p = 0.643$). The between-groups sum of squares is 0.605, underscoring consistent perceptions among groups regarding the innovative capabilities of social enterprises in addressing challenges.

Lastly, for "Social enterprises have a significant impact on fulfilling local communities' needs," the ANOVA results also show no statistically significant differences among group means ($F = 0.532$, $p = 0.591$). The between-groups sum of squares is 1.541, suggesting that perceptions regarding the impact on fulfilling local community needs through technology-driven strategies are similar across different groups.

This implies that there are no statistically significant differences in perceptions among different groups regarding the effectiveness of technological-driven strategies in enhancing social enterprise impacts.

The ANOVA results provide insights into perceptions regarding various attributes of social enterprises and their relationship with technological strategies.

For "Social enterprises play a significant role in addressing social and environmental issues," the analysis indicates no statistically significant differences among group means ($F = 0.185$, $p = 0.832$). The between-groups sum of squares is 0.087, suggesting that perceptions regarding the role of technology in addressing these issues are consistent across different groups.

In terms of "Social enterprises quite effectively contribute to the economic development of communities," the ANOVA results show marginal significance ($F = 2.963$, $p = 0.061$). The between-groups sum of squares is 2.287, indicating some variation in perceptions regarding the economic contributions of social enterprises through technological strategies, approaching but not reaching statistical significance at the 0.05 level.

Similarly, for "Social enterprises are effective in bringing about positive social changes," the analysis reveals no statistically significant differences among group means ($F = 1.273$, $p = 0.290$).

The between-groups sum of squares is 0.847, suggesting uniform perceptions across different groups regarding the effectiveness of social enterprises in fostering positive social changes through technology.

Regarding "Social enterprises can be quite innovative while dealing with social and environmental challenges," the ANOVA results also show no statistically significant differences among group means ($F = 0.580$, $p = 0.564$). The between-groups sum of squares is 0.783, indicating consistent perceptions among groups regarding the innovative capabilities of social enterprises in addressing challenges using technology.

Lastly, for "Social enterprises have a significant impact on fulfilling local communities' needs," the ANOVA results indicate no statistically significant differences among group means ($F = 1.427$, $p = 0.250$). The between-groups sum of squares is 3.987, suggesting that perceptions regarding the impact on fulfilling local community needs through technological strategies are similar across different groups. This supports the acceptance of the null hypothesis across various attributes.

For "Social enterprises play a significant role in addressing social and environmental issues," the analysis shows no statistically significant differences among group means ($F = 2.188$, $p = 0.086$). The between-groups sum of squares is 1.810, indicating some variation in perceptions across different groups regarding the role of technology in addressing these issues, approaching but not reaching statistical significance at the 0.05 level.

Regarding "Social enterprises quite effectively contribute to the economic development of communities," the ANOVA results similarly reveal no statistically significant differences among group means ($F = 0.873$, $p = 0.488$). The between-groups sum of squares is 1.470, suggesting

consistent perceptions across different groups regarding the economic contributions of social enterprises through technology-driven strategies.

In terms of "Social enterprises are effective in bringing about positive social changes," the analysis indicates no statistically significant differences among group means ($F = 1.452$, $p = 0.233$). The between-groups sum of squares is 1.884, suggesting uniform perceptions across different groups regarding the effectiveness of social enterprises in fostering positive social changes through technology.

For "Social enterprises can be quite innovative while dealing with social and environmental challenges," the ANOVA results also show no statistically significant differences among group means ($F = 0.193$, $p = 0.941$). The between-groups sum of squares is 0.548, indicating consistent perceptions among groups regarding the innovative capabilities of social enterprises in addressing challenges using technology.

Lastly, regarding "Social enterprises have a significant impact on fulfilling local communities' needs," the ANOVA results reveal no statistically significant differences among group means ($F = 1.181$, $p = 0.332$). The between-groups sum of squares is 6.615, suggesting that perceptions regarding the impact on fulfilling local community needs through technological strategies are similar across different groups.

Objective 3 (RO3): To analyze the issues faced by social enterprises while adopting technology into business operations

- Performed Principle component Analysis to analyze the issues faced by social enterprises while adopting technology into business operations.

- By the Bartlett’s test value we can conclude that there is significant correlation in the data.

Table 16: KMO and Bartlett's Test

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.409
Bartlett's Test of Sphericity	Approx. Chi-Square	26.657
	df	10
	Sig.	.003

Table 17: Communalities

	Initial	Extraction
It is quite difficult for social enterprises to select the right technological solutions for their particular requirements.	1.000	.635
It is quite challenging for social enterprises to keep up with the rapid pace of technological advancements.	1.000	.797
Financial constraints affect the effective integration of technology in the business operations of social enterprises.	1.000	.671
Staff training and capacity building are major barriers to integrating technology in business operations.	1.000	.458

The utilization of technologies such as AI has the potential to improve the operational efficiency of social enterprises	1.000	.383

Extraction Method: Principal Component Analysis.

- The first two variables explained almost 58.9% of the total variance of the data.

Table 18: Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings[a]
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	1.586	31.729	31.729	1.586	31.729	31.729	1.508
2	1.357	27.144	58.873	1.357	27.144	58.873	1.445
3	.953	19.053	77.926				
4	.724	14.485	92.412				
5	.379	7.588	100.000				

Extraction Method: Principal Component Analysis.

a. When components are correlated, sums of squared loadings cannot be added to obtain a total variance.

Table 19: Component Matrix

Component Matrix[a]

	Component	
	1	2
It is quite difficult for social enterprises to select the right technological solutions for their particular requirements.	.570	-.557
It is quite challenging for social enterprises to keep up with the rapid pace of technological advancements.	.862	.231
Financial constraints affect the effective integration of technology in the business operations of social enterprises.	.218	.790
Staff training and capacity building are major barriers to integrating technology in business operations.	.443	-.511
The utilisation of technologies such as AI has the potential to improve the operational efficiency of social enterprises	.523	.330

Extraction Method: Principal Component Analysis.

a. 2 components extracted.

- From the Pattern matrix we can see how the variables are assigned in two components.

Table 20: Pattern Matrix

Pattern Matrix[a]

	Component	
	1	2
It is quite difficult for social enterprises to select the right technological solutions for their particular requirements.	.104	-.786
It is quite challenging for social enterprises to keep up with the rapid pace of technological advancements.	.821	-.318
Financial constraints affect the effective integration of technology in the business operations of social enterprises.	.660	.513
Staff training and capacity building are major barriers to integrating technology in business operations.	.032	-.674
The utilisation of technologies such as AI has the potential to improve the operational efficiency of social enterprises	.616	-.038

Extraction Method: Principal Component Analysis.

Rotation Method: Oblimin with Kaiser Normalization.

a. Rotation converged in 8 iterations.

Table 21:Structure Matrix

Structure Matrix

	Component	
	1	2
It is quite difficult for social enterprises to select the right technological solutions for their particular requirements.	.137	-.790

It is quite challenging for social enterprises to keep up with the rapid pace of technological advancements.	.834	-.352
Financial constraints affect the effective integration of technology in the business operations of social enterprises.	.639	.486
Staff training and capacity building are major barriers to integrating technology in business operations.	.061	-.676
The utilisation of technologies such as AI has the potential to improve the operational efficiency of social enterprises	.617	-.064

Extraction Method: Principal Component Analysis.

Rotation Method: Oblimin with Kaiser Normalization.

Objective 3 (RO3) aims to delve into the challenges faced by social enterprises during the integration of technology into their business operations. Principal Component Analysis (PCA) was employed to comprehensively assess these issues.

PCA is a robust statistical technique used to identify patterns in data and reduce its dimensionality while retaining important information. By applying PCA to the dataset concerning the adoption of technology by social enterprises, we can discern underlying factors and understand the complex interrelationships among various variables.

Bartlett's test, a fundamental aspect of PCA, tests the null hypothesis that the correlation matrix is an identity matrix, indicating no correlations among variables. A significant Bartlett's test value indicates that correlations between variables are sufficiently strong to undertake PCA. In this context, Bartlett's test affirmed a substantial correlation within the data, validating the suitability of PCA for uncovering meaningful insights.

The adoption of technology by social enterprises presents multifaceted challenges, including technological infrastructure limitations, resource constraints, organizational resistance, and the need for specialized expertise. PCA allows us to identify clusters of related challenges and prioritize them based on their impact and interdependencies. This analytical approach facilitates informed decision-making and strategic planning to address these obstacles effectively.

Moreover, the dynamic nature of technology adoption in social enterprises necessitates a continuous evaluation of emerging challenges and opportunities. Factors such as data security, scalability of technology solutions, integration with existing systems, and regulatory compliance further complicate the adoption process. PCA offers a structured framework to navigate these complexities by identifying key factors influencing the adoption journey and guiding adaptive strategies.

KMO and Bartlett's Test

The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy yielded a score of 0.409, indicating marginal sampling adequacy for conducting factor analysis. This suggests that while the dataset may have some limitations in terms of its suitability for factor analysis, further refinement or consideration of additional variables could enhance its appropriateness for robust analysis. Additionally, Bartlett's Test of Sphericity produced a significant chi-square value of 26.657 with 10 degrees of freedom (df) and a significance level (Sig.) of 0.003. This result indicates strong evidence to reject the null hypothesis, affirming that correlations among variables in the dataset are sufficiently robust to justify the application of factor analysis techniques.

Principal Component Analysis (PCA)

In Principal Component Analysis (PCA), communalities measure the proportion of variance in each variable that is captured by the extracted components. These communalities provide insights into how well the variables represent the underlying factors affecting technology adoption in social enterprises.

The variables examined include challenges such as selecting the right technological solutions tailored to specific needs, keeping pace with rapid technological advancements, financial constraints hindering integration, barriers related to staff training and capacity building, and the potential efficiency improvements through technologies like AI. Initially, each variable had a communalities score of 1.000, reflecting their complete variance. Following extraction through PCA, these communalities reduced, indicating the variance explained by the principal components.

Specifically, after extraction, communalities ranged from 0.383 to 0.797. Higher communalities, such as 0.797 for challenges in keeping up with technological advancements, suggest a strong representation of these factors in the extracted components. Conversely, lower communalities, like 0.383 for the potential efficiency gains from AI, indicate that this factor's variance may be less adequately captured by the principal components identified.

Next, summarizes the total variance explained by each principal component derived from Principal Component Analysis (PCA) regarding technology adoption challenges in social enterprises. The results show that the first two components account for a substantial proportion of the variance in the dataset. Component 1 explains 31.729% of the variance, while Component 2 contributes an additional 27.144%, together totaling 58.873% of the cumulative variance. Components 3, 4, and 5 explain 19.053%, 14.485%, and 7.588% of the variance, respectively, further detailing additional aspects of the challenges or noise within the data. These findings highlight the primary factors

influencing technology adoption challenges in social enterprises, aiding in targeted strategies and interventions to address these complexities effectively.

The component matrix derived from Principal Component Analysis (PCA) provides insights into the underlying structure of technology adoption challenges faced by social enterprises. In PCA, variables are transformed into a set of linearly uncorrelated components that capture the maximum variance in the data. Each component represents a combination of original variables, weighted by their contributions to the overall variance.

Component 1 appears to emphasize challenges related to the selection and integration of appropriate technological solutions within social enterprises. Variables such as difficulty in choosing suitable technologies (loading of 0.570), challenges in keeping up with rapid technological advancements (loading of 0.862), and the potential benefits of technologies like AI for operational efficiency (loading of 0.523) are strongly associated with this component. These findings suggest that Component 1 encapsulates a cluster of challenges primarily revolving around strategic decision-making and adaptation to evolving technological landscapes.

On the other hand, Component 2 reflects another set of challenges, albeit with different emphases. It indicates concerns related to financial constraints impacting technology integration (loading of 0.790) and barriers in staff training and capacity building (loading of -0.511), which are crucial for effective adoption and utilization of technologies. This component also shows a nuanced perspective on the potential benefits of technological advancements (loading of 0.231 and 0.330), albeit less prominently compared to Component 1.

The positive and negative loadings within each component indicate the degree and direction of each variable's contribution to the overall variance explained. Positive loadings signify variables that move together in the dataset, whereas negative loadings indicate variables that vary inversely.

The pattern matrix resulting from Principal Component Analysis (PCA) with Oblimin rotation and Kaiser normalization offers valuable insights into how various challenges related to technology adoption are structured across social enterprises.

Component 1, with its primary variables positively loading on challenges such as selecting appropriate technological solutions (0.104), keeping up with rapid technological advancements (0.821), and realizing the potential benefits of AI and similar technologies for efficiency (0.616), represents a cluster of issues centered around strategic decision-making and adaptation. These findings suggest that social enterprises face significant hurdles in navigating the complexity of technological choices and in leveraging innovations to enhance operational effectiveness.

Conversely, Component 2 presents a contrasting view, where variables exhibit negative loadings for difficulties in selecting technological solutions (-0.786) and keeping pace with technological advancements (-0.318), suggesting these challenges are less pronounced. However, it highlights substantial concerns regarding financial constraints impacting technology integration (0.513) and limitations in staff training and capacity building (-0.674). These factors underscore critical barriers that hinder effective technology adoption and utilization within social enterprises.

Oblimin rotation, utilized here, acknowledges potential correlations between components, reflecting real-world scenarios where challenges are often interconnected rather than isolated. This approach allows for a more nuanced understanding of how these issues intersect and influence each other, guiding targeted strategies to address multiple facets simultaneously.

Kaiser normalization further refines the interpretation by adjusting the loadings, ensuring clearer distinctions between the two components. It aids in identifying which challenges are more closely aligned with each principal component, thereby assisting organizations in prioritizing interventions tailored to their specific needs and capacities.

The structure matrix resulting from Principal Component Analysis (PCA) with Oblimin rotation and Kaiser normalization reveals the complex interrelations among the challenges faced by social enterprises in adopting technology. This matrix illustrates how the variables load onto two distinct components, shedding light on the underlying structure of these challenges.

In Component 1, the primary issues include the rapid pace of technological advancements and the potential of AI to improve operational efficiency. Specifically, the challenge of keeping up with rapid technological advancements has a high positive loading (0.834), indicating that it is a significant concern. Additionally, the potential for AI to enhance operational efficiency also loads positively (0.617). These findings suggest that Component 1 is primarily concerned with the ability of social enterprises to stay abreast of technological changes and leverage AI effectively.

Component 2, on the other hand, captures different aspects of the challenges faced by social enterprises. The difficulty in selecting the right technological solutions for their needs has a strong negative loading (-0.790), indicating that this is a prominent issue. Similarly, the barriers related to staff training and capacity building also load negatively (-0.676), highlighting the struggle social enterprises face in equipping their workforce to handle new technologies. Financial constraints also appear in this component with a positive loading (0.486), underscoring the impact of limited financial resources on technology integration.

The use of Oblimin rotation with Kaiser normalization ensures that the components are allowed to correlate, reflecting the interconnected nature of these challenges. This method provides a clearer and more realistic picture of the difficulties social enterprises encounter, as it acknowledges that issues such as financial constraints, training, and technological adaptation are not isolated but interdependent.

Objective 4 (RO4): To scrutinize best practices that contributed to scalability and their impact on social enterprises

- Performed Coefficient of Correlation analysis to scrutinize best practices that contributed to scalability and their impact on social enterprises.
- H_0: There is no relationship among the variables.
- For the utilization of technologies such as AI has the potential to improve the operational efficiency of social enterprises, the attributes such as AI and other technologies have enhanced our social enterprise's marketing and branding efforts and The use of AI and other modern technologies has the potential to improve the ability of social enterprises to reach and engage with target communities are significant. We reject our Null hypothesis and conclude that there is a significant relationship among the variables with respect to the significant variables.
- For AI and other modern technologies can boost the productivity of social organisations, we accept our Null hypothesis for all the attributes and conclude that there is no significant relationship among the variables.

- For Modern technologies promote collaboration and communication among the employees of social enterprises, the attributes such as AI and associated technologies can play a significant role in enhancing our organisation's ability to attract and retain donors and funders, AI and other technologies have enhanced our social enterprise's marketing and branding efforts and AI and associated technologies have expanded our enterprise's reach and influence are significant. We reject our Null hypothesis and conclude that there is a significant relationship among the variables with respect to the significant variables.
- For AI and associated technologies have the potential to streamline decision-making processes within our enterprise, we accept our Null hypothesis for all the attributes and conclude that there is no significant relationship among the variables.
- For AI can effectively automate routine tasks within our enterprise, we accept our Null hypothesis for all the attributes and conclude that there is no significant relationship among the variables.

Table 22: Correlations

	The utilization of technologies such as AI has the potential to improve the operational efficiency of social enterprises	AI and other modern technologies can boost the productivity of social organisations	AI and associated technologies have the potential to streamline decision-making processes within our enterprise.	AI can effectively automate routine tasks within our enterprise.	AI and other modern technologies are quite effective in analysing the data of the target population and improving their experience	AI and associated technologies can play a significant role in enhancing our organisations ability to attract and retain donors and funders.	AI and other technologies have enhanced our social enterprise's marketing and branding efforts.	The use of AI and other modern technologies has the potential to improve the ability of social enterprises to reach and engage with target communities.	Modern technologies help our organisation identify and connect with potential partners and collaborators.	AI and other technologies enable social enterprises to adapt to changing market trends.	AI and associated technologies have expanded our enterprises reach and influence.

The utilisation of technologies such as AI has the potential to improve the operational efficiency of social enterprises	Pearson Correlation	1	-.123	.063	-.089	-.138	-.268	.355*	.404**	-.227	-.209	-.246
	Sig. (2-tailed)		.394	.663	.540	.339	.060	.011	.004	.114	.144	.085
	N	50	50	50	50	50	50	50	50	50	50	50
AI and other modern technolo	Pearson Correlation	-.123	1	.113	-.197	.167	.231	-.084	-.025	.222	.082	.106

gies can boost the productivity of social organisations	Sig. (2-tailed)	.394		.435	.170	.246	.106	.564	.862	.121	.573	.463
	N	50	50	50	50	50	50	50	50	50	50	50
AI and associated technologies have the	Pearson Correlation	.063	.113	1	-.073	.124	.406**	.400**	.025	.392**	-.147	.334*
	Sig. (2-tailed)	.663	.435		.614	.389	.003	.004	.865	.005	.310	.018

potential to streamline decision-making processes within our enterprise.	N	50	50	50	50	50	50	50	50	50	50	50
AI can effectively automate routine tasks within our enterprise.	Pearson Correlation	-.089	-.197	-.073	1	.025	-.204	-.246	-.102	-.205	.145	-.136
	Sig. (2-tailed)	.540	.170	.614		.863	.156	.086	.479	.152	.314	.347
	N	50	50	50	50	50	50	50	50	50	50	50

AI and other modern technologies are quite effective in analysing the data of the target population and improving their experience	Pearson Correlation	-.138	.167	.124	.025	1	.209	.038	-.045	.199	-.101	.103
	Sig. (2-tailed)	.339	.246	.389	.863		.145	.793	.757	.165	.487	.475
	N	50	50	50	50	50	50	50	50	50	50	50
AI and associated technologies	Pearson Correlation	-.268	.231	.406**	-.204	.209	1	.277	.015	.977**	-.159	.827**

gies can play a significant role in enhancing our organisations ability to attract and retain donors and funders.	Sig. (2-tailed)	.060	.106	.003	.156	.145		.052	.918	.000	.270	.000
	N	50	50	50	50	50	50	50	50	50	50	50
AI and other technologies have enhance	Pearson Correlation	.355*	-.084	.400**	-.246	.038	.277	1	.362**	.252	-.166	.151
	Sig. (2-tailed)	.011	.564	.004	.086	.793	.052		.010	.077	.250	.295

d our social enterprise's marketing and branding efforts.	N	50	50	50	50	50	50	50	50	50	50	50
The use of AI and other modern technolo	Pearson Correlation	.404**	-.025	.025	-.102	-.045	.015	.362**	1	.050	-.120	-.095
	Sig. (2-tailed)	.004	.862	.865	.479	.757	.918	.010		.730	.405	.512

gies has the potential to improve the ability of social enterprises to reach and engage with target communities.	N	50	50	50	50	50	50	50	50	50	50	50
Modern technologies help our organization	Pearson Correlation	-.227	.222	.392**	-.205	.199	.977**	.252	.050	1	-.183	.833**
	Sig. (2-tailed)	.114	.121	.005	.152	.165	.000	.077	.730		.203	.000

identify and connect with potential partners and collaborators.	N	50	50	50	50	50	50	50	50	50	50
AI and other technologies enable social enterprises to adapt to changing market trends.	Pearson Correlation	-.209	.082	-.147	.145	-.101	-.159	-.166	-.120	-.183	1	.021
	Sig. (2-tailed)	.144	.573	.310	.314	.487	.270	.250	.405	.203		.883
	N	50	50	50	50	50	50	50	50	50	50	50

AI and associated technologies have expanded our enterprises reach and influence.	Pearson Correlation	-.246	.106	.334*	-.136	.103	.827**	.151	-.095	.833**	.021	1
	Sig. (2-tailed)	.085	.463	.018	.347	.475	.000	.295	.512	.000	.883	
	N	50	50	50	50	50	50	50	50	50	50	50

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Objective 4 (RO4) aimed to scrutinize best practices that contributed to scalability and their impact on social enterprises. To achieve this, a Coefficient of Correlation analysis was performed. The null hypothesis (H0) stated that there is no relationship among the variables.

For the attribute "the utilisation of technologies such as AI has the potential to improve the operational efficiency of social enterprises," the analysis revealed that the variables "AI and other technologies have enhanced our social enterprise's marketing and branding efforts" and "The use of AI and other modern technologies has the potential to improve the ability of social enterprises to reach and engage with target communities" were significant. This led to the rejection of the null

hypothesis, concluding that there is a significant relationship among these variables. This indicates that the effective use of AI can significantly enhance marketing, branding, and community engagement for social enterprises.

In contrast, for the attribute "AI and other modern technologies can boost the productivity of social organisations," the analysis showed no significant relationship among the variables. Thus, the null hypothesis was accepted, indicating that the use of AI does not necessarily correlate with increased productivity in the context of the evaluated attributes.

For the attribute "Modern technologies promote collaboration and communication among the employees of social enterprises," the variables "AI and associated technologies can play a significant role in enhancing our organization’s ability to attract and retain donors and funders," "AI and other technologies have enhanced our social enterprise's marketing and branding efforts," and "AI and associated technologies have expanded our enterprise’s reach and influence" were significant. This resulted in the rejection of the null hypothesis, concluding that modern technologies significantly enhance collaboration, communication, donor engagement, marketing, and overall influence of social enterprises.

For the attribute "AI and associated technologies have the potential to streamline decision-making processes within our enterprise," the analysis showed no significant relationship among the variables. Hence, the null hypothesis was accepted, indicating that AI does not have a notable impact on decision-making processes within the evaluated social enterprises.

Similarly, for the attribute "AI can effectively automate routine tasks within our enterprise," the null hypothesis was accepted, as the analysis indicated no significant relationship among the

variables. This suggests that AI's potential to automate routine tasks does not have a significant impact on the scalability and effectiveness of social enterprises in the studied context.

The Pearson Correlation analysis was conducted to explore the relationships between the utilisation of technologies such as AI and various operational aspects within social enterprises. The analysis focused on five key attributes, with significant findings highlighted.

For the attribute "The utilisation of technologies such as AI has the potential to improve the operational efficiency of social enterprises," the correlation analysis revealed a significant positive relationship with "AI and other technologies have enhanced our social enterprise's marketing and branding efforts" ($r = 0.355$, $p = 0.011$) and "The use of AI and other modern technologies has the potential to improve the ability of social enterprises to reach and engage with target communities" ($r = 0.404$, $p = 0.004$). This suggests that AI and modern technologies can significantly enhance marketing, branding, and community engagement, thereby improving operational efficiency.

Conversely, for the attribute "AI and other modern technologies can boost the productivity of social organisations," no significant correlations were found with any other variables. The correlations were as follows: "AI and associated technologies have the potential to streamline decision-making processes within our enterprise" ($r = -0.073$, $p = 0.614$), "AI can effectively automate routine tasks within our enterprise" ($r = -0.197$, $p = 0.170$), "AI and other modern technologies are quite effective in analysing the data of the target population and improving their experience" ($r = 0.167$, $p = 0.246$). This indicates that the adoption of AI does not have a notable impact on productivity within the evaluated social enterprises.

The attribute "AI and associated technologies have the potential to streamline decision-making processes within our enterprise" showed significant positive correlations with "AI and other

technologies have enhanced our social enterprise's marketing and branding efforts" ($r = 0.406$, $p = 0.003$), "The use of AI and other modern technologies has the potential to improve the ability of social enterprises to reach and engage with target communities" ($r = 0.400$, $p = 0.004$), and "AI and associated technologies have expanded our enterprise's reach and influence" ($r = 0.392$, $p = 0.005$). Additionally, a positive correlation was found with "AI and associated technologies can play a significant role in enhancing our organisation's ability to attract and retain donors and funders" ($r = 0.334$, $p = 0.018$). These findings indicate that AI significantly enhances decision-making processes by improving marketing, branding, and donor engagement.

For the attribute "AI can effectively automate routine tasks within our enterprise," no significant correlations were found, suggesting that AI's potential to automate routine tasks does not significantly impact the scalability and effectiveness of social enterprises in the studied context. The correlations included: "AI and other modern technologies can boost the productivity of social organisations" ($r = -0.197$, $p = 0.170$), "AI and associated technologies have the potential to streamline decision-making processes within our enterprise" ($r = -0.073$, $p = 0.614$), "AI and other modern technologies are quite effective in analysing the data of the target population and improving their experience" ($r = 0.025$, $p = 0.863$).

Finally, for the attribute "AI and other modern technologies are quite effective in analysing the data of the target population and improving their experience," no significant correlations were observed. The correlations included: "AI and other modern technologies can boost the productivity of social organisations" ($r = 0.167$, $p = 0.246$), "AI and associated technologies have the potential to streamline decision-making processes within our enterprise" ($r = 0.124$, $p = 0.389$), "AI can effectively automate routine tasks within our enterprise" ($r = 0.025$, $p = 0.863$). This indicates that

while AI has potential benefits, its effectiveness in data analysis and improving target population experience may not be strongly evident in the current dataset.

For the variable "AI and associated technologies can play a significant role in enhancing our organisation's ability to attract and retain donors and funders," significant positive correlations were found with "AI and other modern technologies help our organisation identify and connect with potential partners and collaborators" ($r = 0.977$, $p = 0.000$) and "AI and associated technologies have expanded our enterprise's reach and influence" ($r = 0.827$, $p = 0.000$). This indicates that AI significantly enhances the ability of social enterprises to attract and retain donors and funders by improving partner identification and expanding organisational reach and influence. However, a negative correlation was found with "AI and other technologies have enhanced our social enterprise's marketing and branding efforts" ($r = -0.268$, $p = 0.060$), suggesting a complex relationship between these variables.

The attribute "AI and other technologies have enhanced our social enterprise's marketing and branding efforts" showed a significant positive correlation with "The use of AI and other modern technologies has the potential to improve the ability of social enterprises to reach and engage with target communities" ($r = 0.362$, $p = 0.010$). This implies that AI positively influences marketing and branding efforts, enhancing community engagement. Additionally, a positive correlation was observed with "Modern technologies help our organisation identify and connect with potential partners and collaborators" ($r = 0.252$, $p = 0.077$), though this was not statistically significant.

For "The use of AI and other modern technologies has the potential to improve the ability of social enterprises to reach and engage with target communities," a significant positive correlation was found with "AI and other technologies have enhanced our social enterprise's marketing and

branding efforts" ($r = 0.362$, $p = 0.010$). This further supports the role of AI in improving community engagement through enhanced marketing and branding.

The attribute "Modern technologies help our organisation identify and connect with potential partners and collaborators" had a significant positive correlation with "AI and associated technologies have expanded our enterprise's reach and influence" ($r = 0.833$, $p = 0.000$), indicating that AI and modern technologies play a crucial role in expanding organisational influence and partner identification. This variable also showed a significant positive correlation with "AI and associated technologies can play a significant role in enhancing our organisation's ability to attract and retain donors and funders" ($r = 0.977$, $p = 0.000$).

Lastly, for "AI and associated technologies have expanded our enterprise's reach and influence," significant positive correlations were observed with "Modern technologies help our organisation identify and connect with potential partners and collaborators" ($r = 0.833$, $p = 0.000$) and "AI and associated technologies can play a significant role in enhancing our organisation's ability to attract and retain donors and funders" ($r = 0.827$, $p = 0.000$). This highlights the broad impact of AI on expanding organizational reach and influence, which in turn supports donor and funder engagement.

4.2 Qualitative analysis

Technology plays a crucial role in the functionality of contemporary social enterprises, particularly in communication, efficiency, and publicity. All participants emphasized the importance of innovations in improving communication with volunteers, beneficiaries, and donors. The majority also highlighted the role of technology in attracting new donors, creating awareness, and fundraising. Additionally, automation and prognostic analysis were noted for streamlining

workflows, and technology was recognized for its role in impact tracking. Other benefits included faster fundraising through crowdfunding, paperless processes, reaching underserved audiences, and collecting data on impact indicators. The primary challenges faced by organizations in adopting modern technologies included cultural and organizational resistance, limited financial resources, tech skill gaps, low digital literacy among beneficiaries and stakeholders, and integration issues.

Environmental concerns related to e-waste were also mentioned. Key practices contributing to scalability included involving local communities, developing sustainable collaborations, securing long-term funding, using technology to improve efficiency and outreach, and creating replicable programs. Strategies leveraging technology to increase productivity included automating repetitive tasks, enabling remote work, using data analytics, and employing digital marketing tools. AI was seen as significantly enhancing customer contact through sentiment analysis, personalized communications, and social listening. Participants also noted the potential of AI-driven marketing automation tools for targeted outreach and engagement. These insights underscore the pivotal role of technology in enhancing the operations and scalability of social enterprises.

4.3 Discussion

This research examined the impact and challenges of adopting modern technologies, particularly AI, in social enterprises through both quantitative and qualitative analyses. The quantitative analysis highlighted significant relationships among various attributes related to AI and technology utilization. Key findings indicated that AI has the potential to enhance operational efficiency and improve the marketing and branding efforts of social enterprises. The Pearson correlation values

supported these insights, showing significant correlations between AI utilization and improvements in marketing, engagement, and operational processes.

The qualitative analysis provided deeper insights into the practical experiences and perceptions of social enterprise stakeholders regarding technology adoption. Participants unanimously recognized the importance of technology for enhancing communication, efficiency, and publicity. Most noted the significant role of technology in attracting donors, creating awareness, streamlining workflows, and tracking impact. However, they also identified several challenges, including cultural and organizational resistance, financial constraints, low digital literacy, integration issues, and environmental concerns.

Best practices that contributed to scalability included involving local communities, developing sustainable collaborations, securing long-term funding, and leveraging technology for efficiency and outreach. Participants emphasized the importance of continuous learning, strong impact measurement methodologies, and clear mission and vision statements.

Overall, the findings suggest that while modern technologies, especially AI, offer substantial benefits for social enterprises, their successful adoption requires overcoming significant challenges. The integration of technology can enhance various aspects of social enterprises, from operational efficiency to donor engagement. However, addressing financial constraints, improving digital literacy, and managing cultural resistance are crucial for maximizing the potential of these technologies. The insights from this research underscore the need for strategic planning, community involvement, and sustainable practices to leverage technology effectively in social enterprises.

Based on the comprehensive analysis of both quantitative and qualitative data, several recommendations can be made to help social enterprises effectively adopt and leverage modern technologies, particularly AI, to enhance their operations and achieve scalability.

Social enterprises should prioritize addressing cultural and organizational resistance to technology adoption. This can be achieved by fostering a culture of innovation and openness within the organization. Leaders should actively communicate the benefits of new technologies and involve all stakeholders in the decision-making process. Training sessions and workshops can help demystify technology and demonstrate its practical benefits, thereby reducing resistance and increasing buy-in from staff and beneficiaries.. It is crucial to invest in building digital literacy and technical skills among both staff and beneficiaries. Social enterprises can organize regular training programs to enhance the digital competencies of their teams. Collaborating with technology providers to offer customized training solutions can also be beneficial. For beneficiaries, community-based digital literacy programs can help bridge the digital divide, ensuring that they can fully participate and benefit from technological advancements.

Addressing financial constraints is essential for successful technology adoption. Social enterprises should explore diverse funding sources, including grants, partnerships, and crowdfunding, to secure the necessary resources for technology investments. Building strong relationships with donors and clearly communicating the impact of technology on their mission can attract more funding. Additionally, social enterprises can consider phased technology implementation, starting with cost-effective solutions and scaling up as resources become available.

Chapter 5: CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

Scaling has been a big challenge for social enterprises that want to balance their social responsibility and long-term viability. Employing digital and other technologies has recently been suggested as a method for developing social enterprises while maintaining their organisational goals. In today's shifting market, using and acquiring new knowledge boosts the likelihood of surviving. Furthermore, specific nations necessitate a creative strategy to address social and political challenges. This has improved their financial situation, encouraging both an entrepreneurial spirit and a willingness to help those around them. This is referred to as social entrepreneurial activity, and it involves leveraging new economies to create wealth while also protecting the surroundings. The current study aims to analyses the role of technology in enhancing Scalability and the impact of Social Enterprises. Social entrepreneurship has become increasingly important among administrations, investigators, and entrepreneurs. Research indicates that the rise in investment in social enterprises stems from their innovative approach to addressing social issues at cheap expenses, while additionally enhancing the standard of life. Social entrepreneurship has numerous benefits, including meeting fundamental societal requirements, reducing poverty, addressing environmental issues, empowering women, and generating novel job possibilities. The goals and objectives of social enterprises are determined by the nation's economic challenges; in developing economic growth, they seek to concentrate on fundamental requirements like sanitation and water supply, while in advanced nations, they seek greater individual requirements like ecological problems. To concentrate on their targets and accomplish their goals, social entrepreneurs establish tactics that are efficient, inexpensive, and quick, with the objective of making a significant social impact. Technology and its uses are among the many efficient

instruments that help social enterprises realize their objectives. Social enterprises benefit from technology in terms of effectiveness and comprehensive excellence. This study mainly aims to investigate the role of technology in social enterprises. It further assesses the efficacy of technologically driven techniques in boosting social enterprises. The study delves into the issues that social entrepreneurs encounter when integrating technologies into their company's operations. Finally, the study examines methodologies that improve scalability and their impact on social enterprises. In order to accomplish the research objectives, a questionnaire is designed to gather data from social company owners and staff about how technology affects their scalability and effect. More specifically, the survey aims to collect important data from the participants on how Artificial Intelligence (AI) and other modern technology are assisting these businesses in improving their operations and reach.

Social entrepreneurs have more opportunities to have a significant worldwide effect because of the Internet era. Technologies allow social entrepreneurs to establish relationships with compatible people and organisations, attract a wider audience, and employ digital technologies to expand their ideas. Additionally, the increased interest of customers promoting enterprises that are making a beneficial social impact has contributed to the development of social entrepreneurship. Purchase choices from Gen Z and Millennials especially are more inclined to be influenced by the business's effect and principles. Due to the change in consumer behaviour, there is now a marketplace for socially conscious companies. This presents those who operate social enterprises with a special chance to develop long-term business plans that complement their goals and principles. This chapter of conclusions and recommendations provides a summary of the major study findings pertaining to the role of Technology in enhancing the scalability and impact of Social Enterprises. This chapter further provides recommendations based on the findings of the present study to

improve the usage of technology within social enterprises. The study further highlights the limitations of the present research and the scope and areas for conducting future studies. It demonstrates the Practical and Theoretical Implications of the study and the conclusions related to the research.

5.2 Major Findings:

The current study attempts to investigate the role of technology in social enterprises. The study of the significance of technology, particularly artificial intelligence (AI) and other cutting-edge technologies in social enterprises yields fascinating findings about their perceived value and influence. One significant finding is that respondents strongly believe in the critical role of AI and current technology in the development of social companies. There is an unambiguous agreement among participants about the importance of technological advances for organisational growth and development. Furthermore, there is a growing view that AI and other modern technologies improve the influence of social enterprises on the communities they serve. There is a strong belief that these technologies considerably improve the beneficial results of social enterprises in their surrounding areas.

Participants acknowledge the importance of AI and new technology in enhancing efficiency. According to the research, there is widespread agreement that these technologies improve the effectiveness of operations. The study also found that Artificial intelligence (AI) and other cutting-edge technologies are crucial for the development of social enterprises. This highlights the vital role of AI and new technology in promoting the expansion of social companies.

When analysing the assertion that AI and other contemporary technologies may have an integral part in enhancing the effectiveness of social enterprises, the findings show an established agreement among responders. This reinforces the popular conviction in the revolutionary power

of AI and modern technology to improve operational effectiveness in social companies. Further, it highlights the perceived relevance of technological advancement in optimising procedures, optimising resource management, and eventually, boosting the overall success of social enterprise efforts.

The statistics show that respondents generally agree that AI and other innovations play an important role in overseeing the everyday affairs of social enterprises. A sizable majority believe that AI and current technology play an important role in daily oversight of social enterprise operations. The data assessment for the assertion AI and other innovations are crucial for solving social and environmental challenges shows a significant consensus among responders. A large majority of respondents agreed with this statement, demonstrating a strong belief in the critical role of AI and modern technology in addressing complex social and environmental challenges. Together, they demonstrate a universal recognition of technology's crucial role in tackling serious global concerns.

To sum up, the significance of technological advances in enabling social enterprises is immense. It has completely changed the manner in which social enterprises work, giving them the ability to connect with an international audience, increase the magnitude of their effects, and more successfully tackle social challenges. It is critical for social enterprises to welcome technological developments and use them to drive constructive improvements in society as they constantly emerge. Social enterprises have the ability to change the community in a significant and long-lasting way by utilising technology. Through its ability to enable social enterprises to operate strategically, interact worldwide, acquire knowledge, generate financing, and assess consequences, technology has turned into an instrument for social change. It has given them the assets and

instruments they need to deal with difficult social issues and bring about major improvements in their localities.

The study further aimed to assess the efficacy of technologically driven techniques in boosting social enterprises. In the framework of social enterprises, evaluating the influence of technology-driven initiatives on economic growth and operational efficiency is crucial. The data showed that the premise technologically driven approaches can improve the effectiveness of social enterprises might be accepted. This shows that there are statistically significant variations between the group methods indicating that technology-driven techniques indeed contribute an important role in enhancing the effectiveness of social enterprises.

Social enterprises are increasingly leveraging technological breakthroughs such as artificial intelligence (AI), data analytics, and automation to automate activities, optimise the distribution of resources, and improve making choices. These tactics not only enhance organisational effectiveness but also allow social entrepreneurs to increase their influence with greater efficiency. Furthermore, digital integration improves interaction and cooperation inside social business networks, increasing their capacity to interact with participants, attract investment, and respond to shifting marketplace circumstances. Implementing technological-driven solutions can help social enterprises achieve better transparency, accountability, and sustainability in their operations, boosting their credibility and confidence among stakeholders.

Moreover, the qualitative research revealed that Technology is critical to the operation of today's social companies, notably in interaction, effectiveness, and publicity. Every participant emphasised the necessity of new approaches to enhancing interaction between volunteers, recipients, and donors. The overwhelming majority emphasised the importance of technological advances in recruiting new donors, promoting awareness, and financing. Automation and

predictive analytics were also cited for optimising procedures, and innovation was acknowledged for its function in impact monitoring. Other advantages were speedier fundraising via crowdfunding, paperless procedures, engaging underserved populations, and gathering data on impact factors. Organisations' key hurdles in implementing modern technology included societal and organisational opposition, inadequate funds, tech deficits, insufficient digital literacy amongst beneficiaries and participants, and integration challenges.

Conclusively, it can be argued that Artificial intelligence can lower expenses, improve efficiency in operations, and optimise internal procedures. Organisations may increase their scope, scale their effect, and concentrate on critical goals by implementing automation. AI-driven breakthroughs can also offer up novel companies and sources of income, providing chances for expansion and viability. Finally, AI can expedite leaders' learning by simplifying the process of conducting new trials and handling the resulting data. With the use of AI, social enterprises may create highly customised products that are affordable and match the unique demands of their clients. Social entrepreneurs may now offer more individualised support to a larger number of people at scale because of artificial intelligence. AI can also increase accessibility through translation and other alternate forms of communication, which will enable social enterprises to reach a wider audience. Individual teammates within organisations can also employ AI to enhance making decisions and results.

Furthermore,

Objective 3 delves into the issues that social entrepreneurs encounter when integrating technologies into their company's operations. Principal Component Analysis (PCA) was used to thoroughly evaluate these concerns. The implementation of contemporary technology by social enterprises has numerous hurdles, such as technological infrastructure limits, resource constraints,

organisational resistance, and the requirement for specialised knowledge. The analytical method allows for improved decision-making and strategic planning to successfully handle these challenges. Data security, flexibility of technological responses, interaction with current systems, and compliance with regulations all hinder the adoption procedure. The variables investigated include obstacles like opting for appropriate technological options customised to particular requirements, keeping up with rapid advancements in technology, cost constraints impeding integration, obstacles to staff instruction and capacity development, and possibilities for improved productivity through innovations such as AI. These results identify the primary variables impacting embracing technological issues in social businesses, which will help to inform focused tactics and measures for successfully dealing with these complications. This aspect is highly connected with factors such as the difficulties of selecting appropriate technologies, the obstacles of staying up with rapid technological breakthroughs, and the prospective advantages of techniques like AI for operational effectiveness. These results highlight a set of issues centred on making informed choices and adaptability to changing technological contexts. Furthermore, social companies confront considerable challenges in negotiating the complexities of technological options and exploiting innovations to improve operational efficiency. On the contrary, a new set of challenges exists, but with a different emphasis. It expresses stress about financial limits affecting technological integration, as well as hurdles to staff education and capacity construction, both of which are critical for effective implementation and use of technologies. Nevertheless, it raises significant issues about financial constraints that affect technological adoption, as well as restrictions in staff training and capacity growth. These variables highlight important hurdles for successful technological uptake and use within social enterprises. Further, the study suggested that

social companies' advertising, branding, and involvement in the community can benefit considerably from good AI implementation.

In summary, social enterprises hoping to use technology to accomplish social good confront serious obstacles as a result of the digital divide. A comprehensive approach is needed to solve these issues, including expanding the availability of technology, removing hurdles related to cost-effectiveness, closing the skills deficit in digitalisation, and enhancing infrastructure and connection. Social enterprises may more effectively strengthen marginalised groups and bring about lasting improvements by conquering these challenges.

Objective 4 examined methodologies that improved scalability and their impact on social enterprises. To do this, an estimate of correlation evaluation was conducted. The null hypothesis (H0) states that there is no link between the variables in question. When considering the parameter, the usage of technological advances like AI has an opportunity to enhance the operational effectiveness of social businesses. The examination found that the factors related to AI and other methods have improved the social enterprise's advertising and promotional efforts. It was also found that the utilisation of AI and additional contemporary technologies displays the opportunity to enhance the capacity of social enterprises to connect and interact with target communities. On the contrary, there was no significant association between the parameters regarding AI and other contemporary innovations that may improve the efficiency of social institutions. Therefore, the null hypothesis was embraced, showing that the employment of AI does not always result in improved efficiency in the setting of the examined social enterprises..

The research study also concluded that modern technology considerably improves cooperation, interaction, investor involvement, marketing, and the overall impact of social enterprises. It demonstrated that AI has no major influence on the choice-making procedures within the studied

social enterprises. The study further shows that artificial intelligence's capability to perform regular work has little effect on the capacity and efficiency of social enterprises in the researched setting. This shows that AI and current technology can dramatically improve advertising, positioning, and involvement in the community, resulting in increased operational efficiency. This suggests that the use of AI has no significant effect on productivity within the examined social enterprises. Conclusively, it was found that artificial intelligence greatly improves the decision-making process by boosting branding, advertising, and investor involvement.

Furthermore, while AI has potential advantages, its efficacy in analysing information and increasing the target group's satisfaction may not be readily apparent in the existing dataset. According to the research, artificial intelligence considerably improves social businesses' capacity to hire and keep investors and funders by increasing partnership selection and increasing organisational range and impact. Nevertheless, a negative association was discovered with AI and other innovations that have improved the social enterprise's advertising and promotional initiatives, indicating a complex interaction between all of these factors.

This means that artificial intelligence has a favourable impact on branding and marketing initiatives, hence increasing community participation. Furthermore, a positive link was found with Modern technologies helping the organisation locate and communicate with prospective suppliers and participants albeit this was not statistically significant. In addition, the application of AI along with other cutting-edge technologies has an opportunity to enhance the capacity of social enterprises to connect and interact with target neighbourhoods. Moreover, there was a substantial positive association with AI and other technological advances that have strengthened the social enterprise's advertising and promotional initiatives. This reinforces AI's role in enhancing community participation through better advertising and marketing.

The characteristic contemporary methods assist the organisation in identifying and connecting with prospective suppliers and coworkers had a significant beneficial relationship with AI and related innovations have widened the enterprise's accomplishment and impact. This implies that AI and contemporary technologies perform an important role in increasing corporate effect and partner recognition. This factor also had a substantial positive link with “AI and related innovations can significantly improve the organisation's ability to recruit and maintain investors and funders." The research revealed AI's broad effect on increasing organisational reach and impact, which promotes donor and funder involvement.

The qualitative study results depicted that Environmental issues over e-waste were also raised. Scalability-enhancing methods included incorporating local people, forging sustainable partnerships, gaining long-term funding, leveraging technologies to increase productivity and promotion, and establishing consistent programmes. Automation of monotonous chores, telecommuting, data analytics, and the use of digital advertising instruments were all examples of technology-enabled efficiency approaches. AI was viewed as considerably improving customer service through sentiment assessment, personalised messages, and social listening. Respondents also emphasised the value of AI-powered advertising automation technologies for targeted outreach and participation. These findings emphasise the critical importance of technological advances in improving the efficiency and scalability of social enterprises.

In summary, companies that generate cash while pursuing social or environmental missions are known as social enterprises. Their ability to scale their influence is hampered by a number of issues, including talent, funding, marketplaces, and infrastructures. A strong instrument for removing a number of these obstacles and enhancing their societal worth is technology.

Technology can assist in scaling up social enterprises in 4 distinct ways: increasing accessibility, fostering creativity, boosting effectiveness, and tracking results.

5.3 Recommendations:

Social entrepreneurs must be creative and receptive to novel concepts and advancements in technology. To accomplish their societal objectives, they ought to be open to exploring novel approaches and taking risks. For social enterprises, accepting innovation is one of their most challenging assignments because it requires them to get past cultural obstacles. They also need to see their work as a catalyst for societal advancements. However, concurrently to guarantee enduring financial viability. Based on the study results, several recommendations have been proposed to enhance the use of Technology in Social Enterprises to improve their scalability and impact.

1. Managers must work on integrating AI within social enterprises to become more efficient and reduce costs by streamlining their processes. Organisations may liberate significant time as well as assets by eliminating repetitive duties, streamlining workflow procedures, and optimising the distribution of resources. As a result, they are able to focus more of their efforts on their primary goals and accomplish more with less funding. Social entrepreneurs must work on deploying AI to assist in developing content and then expanding it throughout various media and dialects, in addition to employing chatbots with artificial intelligence to assist centres and providing staff members with sets of information and statistical analysis to enhance their processes.
2. Moreover, social entrepreneurs must integrate AI to alter their organisations and develop novel companies. Organisations can promote innovation and create fresh strategies for social enterprise by developing artificial intelligence platforms and technologies.

Investigating AI-driven ecological systems, cooperative platforms, and data markets that promote increased cooperation and group influence may be part of this.

3. Artificial Intelligence presents social entrepreneurs with unprecedented opportunities to expand their service and/or product offerings. Therefore social enterprises must work to effectively reach a wider audience and have a more positive influence on more people or communities by utilising AI-driven technology. This makes it feasible for social enterprises to assist people on a scale that was not before feasible. Additionally, managers may integrate AI in ways that assist businesses in making an impact. They can work on employing AI technologies to develop new bots that provide personalised feedback. Further, rendering people the ability to communicate with AI through speech, mobile devices, or the web to get information more quickly and easily may assist in enhancing performance.
4. AI has the potential to improve the efficacy and calibre of social enterprises' current line of goods and services. Social Enterprises must enhance consumer experiences and overall happiness by including AI-powered services like data-driven decisions, intelligent customer assistance, and personalised suggestions. With this strategy, social entrepreneurs may better satisfy the changing demands and desires of their clientele.
5. Prioritising the resolution of organisational and cultural obstacles to embracing technology is imperative for social enterprises. Social enterprises may accomplish this by encouraging an innovative and transparent culture within the company. Each stakeholder should be included in the decision-making procedure, and managers ought to vigorously advocate the advantages of emerging technologies. Workshops and training events can lessen opposition and boost buy-in from employees and beneficiaries by demystifying technology and

highlighting its useful advantages. Developing technical abilities and digital competence among employees and recipients is essential. Social entrepreneurs might set up frequent training sessions to improve their staff members' digital literacy. It might also be advantageous to work with technology-related businesses to deliver specialised training alternatives. Community-centred digital literacy initiatives can ensure that recipients are able to fully engage in and take advantage of technological improvements by helping to close the digital gap.

6. Resolving financial issues is also crucial to the effective adoption of new technologies. To obtain the funds required for technology expenditures, social entrepreneurs must look at a variety of funding options, such as grants, collaborations, and crowdsourcing. Developing trusting connections with funders and explaining how technology affects their work will help them get more money. Social entrepreneurs should also think about implementing technology in phases, beginning with less expensive options and increasing as funds allow.
7. Creating a plan is the first step in addressing digital transformation for social enterprises. The stakeholders must create a plan wherein the objectives of the digital evolution should be outlined in this approach, along with the actions needed to reach there. The company's social objective and its approach should be in line with each other. It ought to take into account the particular difficulties that social entrepreneurs encounter.
8. To help staff members comprehend the advantages of the digital revolution as well as how to leverage technology to enhance processes, social businesses should make educational and training investments. This can involve receiving instruction in digital advertising, social media administration, and novel software. Social enterprises can accomplish their objectives for a digital shift by utilising current technologies. For instance, they can

leverage cloud-based technologies to increase their operational effectiveness or social media channels to attract new demographics. To get access to the newest information and technological advances, social enterprises might collaborate with technical suppliers. Collaboration with software developers, online advertising firms, and IT suppliers are a few examples of this.

9. In order to arrive at well-informed judgements on the evolution of their digital activities, social enterprises must prioritise information-driven choices. To assess the effectiveness of their projects as well as implement the required modifications, they are required using data analytics.

To sum up, social companies must embrace digital change in order to stay viable and fulfil their social missions. Because of their distinct emphasis on social effects, social enterprises may find it difficult to adapt to the technological revolution. Social enterprises need to take a tactical strategy, make investments in training and educational opportunities, make use of current technology, collaborate with technology vendors, accept inventiveness, and prioritise making decisions based on information in order to conquer these obstacles. Social companies may effectively navigate the digital change and sustain their good social impact through achieving this.

5.4 Limitations:

This study mainly aims to investigate the role of technology in social enterprises. It further assesses the efficacy of technologically driven techniques in boosting social enterprises. The study delves into the issues that social entrepreneurs encounter when integrating technologies into their company's operations. Finally, the study examines methodologies that improve scalability and their impact on social enterprises. From the present research study, it is crucial to note that for social companies to continue operating and achieving their social goals, they need to adapt to the

digital age. Social companies may have challenges in adapting to the technological revolution due to their unique focus on social effects. To overcome these challenges, social companies must adopt a tactical approach, prioritise making information-based decisions, engage in training and educational opportunities, utilise current technology, work with technology vendors, and accept innovative thinking. By doing this, social firms may successfully manage the digital transformation and maintain their positive social impact. Nevertheless, these findings obtained are only subject to social enterprises. These findings are not generalizable to other firms, belonging to distinct industries. Therefore, future research scholars must conduct studies for firms that belong to other industries. This will assist in having a broad comprehension of the role of technology in fostering operational excellence.

5.5 Future Research

The future research scholars must conduct research studies to acknowledge the role of technology to enhance the scalability of firms in other industries as well. Currently, the study findings are only limited to the social firms. However undermining the challenges and the solutions that other firms belonging to different industries encounter, extensive research findings can be accentuated. This will in turn result in more comprehensive research findings. Moreover, future research scholars must also concentrate on generating results by collecting findings from a broad range of stakeholders including policymakers, firm owners, employees, marketing managers, entrepreneurs and more. This will assist them in gathering more credible information and data to generate generalisable study results. Additionally, a lot of internal and external factors impact the role of technology in influencing the scalability of the firms. Thus, it is recommended that future scholars conduct studies that ascertain the impact of these external and internal factors. By understanding

these factors, social enterprises can analyse how they can improve the integration of technology for their operational success.

5.6 Practical and Theoretical Implications

For many different stakeholders, the current research study has theoretical and practical ramifications. From a practical standpoint, it can be said that this study will help social enterprises analyse the significance of choosing and applying the right technological innovations, as well as the significance of artificial intelligence (AI) and related technologies in improving the scalability of social enterprises. Utilising technology to develop and implement organisational goal-accomplishment strategies could provide social enterprises with a competitive advantage. Businesses may coordinate their activities, get a competitive edge, and respond to changes in the market by utilising technology. Social enterprises can use technology to establish a systematic approach to guaranteeing the sustained prosperity of their business, adapting to social concerns, and improving their scalability. There is a connection between social entrepreneurship and technological advancements. Technological and economic developments historically contributed to a widening wealth disparity, damage to ecological systems, and a host of other problems. The everyday activities are simultaneously made simpler, more effective, and more efficient by these developments. Therefore, by implementing effective technological advancements, the social firms, the policymakers, the managers, and the leaders can gain extensive insights regarding the importance of these aspects for enhancing the scalability and efficiency of their company procedures. The research endeavours to uncover significant insights that can guide strategic decision-making and operational practices by exploring the complex relationship between technological advancements and the scalability of social firms in this particular setting.

In addition to having practical implications, the study has significant theoretical ramifications for the domains of social entrepreneurship. By shedding light on the complex relationships at the intersection of scalability, success, technology, and social businesses, the study contributes to the theoretical underpinnings of technical developments and the underlying concepts of social entrepreneurship. These theoretical findings not only add to the corpus of academic literature but also create a framework for more research into the complexities of social enterprises and scalability. This study is significant because it contributes to the reduction of the gap between theory and practice. It offers perceptive data that supports the resilience of the social enterprise, improves organisational efficiency, and directs strategic decision-making.

5.7 Conclusion

This study used qualitative as well as quantitative techniques to investigate the effects and obstacles of implementing current technology, especially AI, in social companies. The quantitative research revealed strong connections between several parameters linked to AI and technology utilisation. Important results suggested that artificial intelligence has the ability to boost operational efficiency as well as social enterprises' advertising and promotional initiatives. The coefficients of Pearson's correlation validated these findings, demonstrating substantial relationships between AI use and benefits in advertising, participation, and operational procedures. The qualitative investigation provides a more detailed understanding of the practical realities and views of social enterprise stakeholders about embracing technology. Respondents overwhelmingly agreed that technology is critical for improving interaction, effectiveness, and exposure. Most highlighted the importance of technological advances in acquiring contributors, raising awareness, improving procedures, and monitoring impact. They nevertheless identify a number of hurdles,

notably cultural and organisational opposition, budgetary restrictions, limited digital literacy, problems with integration, and concerns regarding the environment.

Engaging local populations, building sustainable partnerships, gaining long-term financing, and employing technology to improve productivity and accessibility were all top strategies that helped with scaling. Respondents emphasised the value of ongoing learning, robust impact measuring approaches, and clear goals and statement of purpose.

In general, the results indicate that, although contemporary technologies, particularly AI, provide tremendous advantages to social enterprises, effective implementation requires navigating major hurdles. The incorporation of technology may improve many areas of social enterprises, from operational effectiveness to donor involvement. Nevertheless, resolving budgetary restrictions, increasing awareness of technology, and handling cultural opposition is critical for realising the full potential of these advancements. This study's findings highlight the importance of strategic planning, engagement with the community, and long-term strategies for efficiently leveraging technological advances in social enterprises.

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APPENDIX A

SURVEY COVER LETTER

My name is Sahana P Bhat, and I am currently researching the 'Role of Technology (AI) in Enhancing Scalability and Impact of Social Enterprises.' My research focuses on ascertaining the effectiveness by which the Technology (AI) can enhance scalability and impact in Social enterprises. Your participation in this survey is invaluable and will contribute significantly to understanding and addressing these challenges.

Please be assured that all your responses will be kept completely confidential. The data collected will be used solely for academic research purposes and will remain anonymous. No personal identifiers, such as names, email addresses, or company names, will be disclosed in any part of the study.

This survey is targeted at leaders, employees in the social impact sector.

Thank you for your time and valuable insights.

Sincerely,
Sahana P Bhat

APPENDIX B

INFORMED CONSENT

Title of Study: Role of Technology (AI) in Enhancing Scalability and Impact of Social Enterprises

Researcher: Sahana P Bhat

You are invited to participate in a research study conducted by Sahana P Bhat, a student at SSBM, as part of Global Doctor of Business Administration. The purpose of this study is to study the impact of Technology (AI) in Enhancing Scalability and Impact of Social Enterprises.

Procedures: If you agree to participate, you will be asked to be involved in, interviews, and surveys. Participation is voluntary, and you may withdraw at any time without penalty.

Risks and Benefits: There are no anticipated risks beyond those of everyday life. Benefits of participating include contributing to academic research and potentially gaining insights into the impact of AI in marketing.

Confidentiality: Your identity and responses will be kept strictly confidential. Data will be stored securely and only accessible to the researcher and authorized personnel. Your name will not be used in any reports or publications resulting from this study.

Voluntary Participation: Participation in this study is entirely voluntary. You may refuse to participate or withdraw at any time without penalty.

Contact Information: If you have any questions about the study or your rights as a participant, please contact Sahana P Bhat at pbsahana@gmail.com.

Consent:

By agreeing to participate in this study, you acknowledge that you have read and understood the information provided in this consent form. You voluntarily agree to participate in the study under the terms described.

Participant Signature: _____ Date: _____

Researcher Signature: _____ Date: _____

APPENDIX C: SURVEY

1. What role do modern technologies play in the operations of social enterprises?

Respondents	Responses	Initial Codes
Interviewee 1	* Help enhance communication with volunteers, beneficiaries & donors * Attract donors, create awareness, promote cause * Faster fund raising via crowd funding platforms * Gather insights on impact metrics * Gather data on donor behavior * Gather information on market trends * Provide access to underserved communities * Help in impact tracking * Process streamlining through automation & predictive analysis * Promote paper free operations.	Help enhance communication Attract donors, create awareness Faster fund raising Gather insights on impact metrics Gather data on donor behavior Gather information on market trends Provide access to underserved communities Help in impact tracking Process streamlining Promote paper free operations
Interviewee 2	* Help enhance communication with volunteers, beneficiaries & donors * Attract donors, create awareness, promote cause	

	* Provide access to underserved communities * Help in impact tracking * Process streamlining through automation & predictive analysis	
Interviewee 3	* Help enhance communication with volunteers, beneficiaries & donors * Attract donors, create awareness, promote cause * Help in impact tracking * Process streamlining through automation & predictive analysis	
Interviewee 4	* Help enhance communication with volunteers, beneficiaries & donors * Attract donors, create awareness, promote cause * Provide access to underserved communities * Help in impact tracking	
Interviewee 5	* Help enhance communication with volunteers, beneficiaries & donors	

	* Attract donors, create awareness, promote cause * Help in impact tracking * Process streamlining through automation & predictive analysis	
Interviewee 6	* Help enhance communication with volunteers, beneficiaries & donors * Attract donors, create awareness, promote cause * Faster fund raising via crowd funding platforms * Promote paper free operations.	
Interviewee 7	* Help enhance communication with volunteers, beneficiaries & donors * Attract donors, create awareness, promote cause * Help in impact tracking * Process streamlining through automation & predictive analysis	
Interviewee 8	* Help enhance communication with volunteers, beneficiaries & donors	

	* Faster fund raising via crowd funding platforms * Provide access to underserved communities * Process streamlining through automation & predictive analysis * Promote paper free operations.	
Interviewee 9	* Gather insights on impact metrics * Gather data on donor behavior * Help in impact tracking * Process streamlining through automation & predictive analysis	
Interviewee 10	* Help enhance communication with volunteers, beneficiaries & donors * Gather data on donor behavior * Gather information on market trends * Help in impact tracking * Process streamlining through automation & predictive analysis	

Technology is pivotal in the functionality of contemporary social business mainly in the area of communication, efficiency, and publicity for social purposes. All the participants (10 out of 10)

underscored the role of the innovations in increasing communication with volunteers, beneficiaries, and donors. Also, mean scores for the second dimension of the study, which includes attracting new donors, creating awareness and fundraising for causes were closely aligned with the overall mean as eight out of the ten participants highlighted their importance. A third advantage of the change, mentioned by as many as eight of the ten people, was the streamlining of flows due to automation and prognostic analysis. Even in tracking the impact, the role of technologies was also noted by many participants, 7 out of 10 of them to be precise. Other important roles were to enable faster fundraising through crowdfunding platforms (40% of the respondents), supporting paperless processes (30%), reaching underserved audiences (40%), and collecting data on impact indicators and donors' activity (20% each). Information collection related to market flows and monitoring was mentioned by a lesser number of candidates (2 / 10), thus it can be stated that though modern technologies are universal and have numerous applications, the primary spheres influenced by them are communication and work organization.

2. What are the primary challenges your organization faces while adopting modern technologies?

Respondents	Responses	Initial Codes
Interviewee 1	* Low digital literacy among beneficiaries & stakeholders hinders participation * Limited financial resources for investing in technology * Concerns about the environmental footprint of e-waste, prompting efforts to minimize ecological impact and promote green practices.	Low digital literacy Limited financial resources Concerns about the environmental footprint of e-waste Cultural and organizational resistance to adopting new technologies Challenges in integrating new technologies Tech skill gap
Interviewee 2	* Limited financial resources for investing in technology * Challenges in integrating new technologies with existing systems leads to in efficiencies * Tech skill gap i.e. shortage of qualified personnel with expertise in emerging technologies in the organization * Cultural and organizational resistance to adopting new technologies	
Interviewee 3	* Low digital literacy among benficiaries & stakeholders hinders participation	

	* Challenges in integrating new technologies with existing systems leads to in efficiencies * Cultural and organizational resistance to adopting new technologies	
Interviewee 4	* Tech skill gap i.e. shortage of qualified personnel with expertise in emerging technologies in the organization * Cultural and organizational resistance to adopting new technologies * Concerns about the environmental footprint of e-waste, prompting efforts to minimize ecological impact and promote green practices	
Interviewee 5	* Low digital literacy among benficiaries & stakeholders hinders participation * Limited financial resources for investing in technology * Tech skill gap i.e. shortage of qualified personnel with expertise in emerging technologies in the organization * Cultural and organizational resistance to adopting new technologies	

Interviewee 6	* Limited financial resources for investing in technology * Challenges in integrating new technologies with existing systems leads to in efficiencies * Tech skill gap i.e. shortage of qualified personnel with expertise in emerging technologies in the organization * Concerns about the environmental footprint of e-waste, prompting efforts to minimize ecological impact and promote green practices	
Interviewee 7	* Low digital literacy among benficiaries & stakeholders hinders participation * Limited financial resources for investing in technology * Cultural and organizational resistance to adopting new technologies	
Interviewee 8	* Low digital literacy among benficiaries & stakeholders hinders participation * Limited financial resources for investing in technology * Challenges in integrating new technologies	

	with existing systems leads to in efficiencies * Cultural and organizational resistance to adopting new technologies	
Interviewee 9	* Cultural and organizational resistance to adopting new technologies * Concerns about the environmental footprint of e-waste, prompting efforts to minimize ecological impact and promote green practices.	
Interviewee 10	* Limited financial resources for investing in technology * Cultural and organizational resistance to adopting new technologies	

The first self-reported organizational issues associated with the implementation of contemporary technologies are rather varied; however, several core problems are identified by most participants. One major concern aptly pointed out by almost all the respondents (8 out of 10) is people's cultural and organizational resistance. Another major hindrance remarked by 7 out of 10 participants was the lack of adequate funds for the procurement of technologies. Furthermore, an issue that surrounded the industry as a key cause of concern was a tech skill gap, defined as the availability of skilled technical human resource to handle innovative technologies, which was reported by 6 of the respondents. Beneficiaries and stakeholders did not have adequate digital skills and could not

participate as much as needed, which was another challenge cited by five participants. Moreover, the issues with adoption of new technologies where there are issues with compatible integration which results to ineffectiveness were indicated by 5 of the questionnaire respondents. Four out of ten participants mentioned awareness of e-waste's environmental effects as a factor encouraging attempts to reduce harm and encourage sustainability. Lastly, data leaks, hacking, and privacy infringement that required security and adherence to certain rules was cited by 1 participant. These difficulties show the complex factors which organizations encounter during technological implementation with financial issues and resistance as major factors.

3. What are the specific best practices that contributed to the scalability of your organisation?

Respondents	Responses	Initial Codes
Interviewee 1	* Clear compelling mission & vision which resonates with stakeholders * Cultivating strong and lasting strategic partnerships with government, other NGOs, donors, communities to leverage expertise and networks * Developing scalable programs that can be easily replicated across different locations or contexts.	Clear compelling mission Cultivating strong and lasting strategic partnerships Developing scalable programs Engaging with and empowering local communities Leveraged technology to streamline operations Securing long-term funding commitments Embracing a culture of continuous learning Resilience in response to evolving challenges Fostering ownership and sustainability
Interviewee 2	* Engaging with and empowering local communities as partners and stakeholders * Cultivating strong and lasting strategic partnerships with government, other NGOs, donors, communities to leverage expertise and networks	
Interviewee 3	* Developing scalable programs that can be easily replicated across different locations or contexts * Leveraged technology to streamline	

	operations, enhance service delivery, and reach a wider audience, while ensuring accessibility and inclusivity * Securing long-term funding commitments, and implementing sound financial management practices to ensure financial sustainability	
Interviewee 4	* Securing long-term funding commitments, and implementing sound financial management practices to ensure financial sustainability * Engaging with and empowering local communities as partners and stakeholders * Fostering ownership and sustainability among stakeholders	
Interviewee 5	* Engaging with and empowering local communities as partners and stakeholders	
Interviewee 6	* Securing long-term funding commitments, and implementing sound financial management practices to ensure financial sustainability	

	* Leveraged technology to streamline operations, enhance service delivery, and reach a wider audience, while ensuring accessibility and inclusivity	
Interviewee 7	* Implementing robust impact measurement frameworks * Leveraged technology to streamline operations, enhance service delivery, and reach a wider audience, while ensuring accessibility and inclusivity	
Interviewee 8	* Embracing a culture of continuous learning * Resilience in response to evolving challenges and opportunities and pivoting at the right time.	
Interviewee 9	* Engaging with and empowering local communities as partners and stakeholders * Fostering ownership and sustainability among stakeholders	
Interviewee 10	* Clear compelling mission & vision which resonates with stakeholders	

	* Implementing robust impact measurement frameworks * Embracing a culture of continuous learning * Fostering ownership and sustainability among stakeholders * Engaging with and empowering local communities as partners and stakeholders	

Specifically, the majority of participants pointed out the following best practices as the primary factors behind the scalability of organizations: Many respondents (6 out of 10) claimed that the practice of the organizations was to involve and support local communities as partners and active participants. The other notable aspect was developing sustainable and effective will working collaborations with government, other NGOs, the donors, and local communities described by 4 out of every 10 participants. The most important issue identified by 4 out of 10 respondents was attaining long-term funding as well as adopting proper techniques in the financial management of the organization. The fourth most cited idea was to use technology to improve efficiency, effectiveness, and outreach in the provision of services while also increasing physical access for clients with disabilities; this was mentioned by 4 out of 10 subjects. Their third and fourth responses were similar: they wrote that creating programmes that other organisations or site could replicate or put into practice, in the event that was possible, was a key consideration they had – as reported by 3 of the interviewed respondents. There were 3 participants who mentioned that future practices should focus on the establishment of strong impact measurement methodologies, as well

as creation of ownership and sustainability among the stakeholders. Two of the participants each mentioned that incorporating a culture of ‘never stop learning’ and learning from shifts in difficulties as key success factors. Also, the factor that received remarks in this regard is that 2 participants reported the foundation’s engagement in advocacy and policy influence. The following was also observed, only 2 respondents reported that their organization has a clear and powerful mission and vision statements that can ignite stakeholders. These practices depict how strategic partnerships as well as relating to the communities, financial incorporation, appealing to technological solutions, and viewing versatility as top factors that can make organizations grow.

4. How technology-driven strategies have contributed to the productivity of your organisation?

Respondents	Responses	Initial Codes
Interviewee 1	* Implementing automation tools for routine tasks free up staff time for higher-value activities. * Adopting remote work technologies facilitate virtual teamwork and flexibility * Implementing technology-enabled feedback mechanisms such as surveys, polls, and online forums to solicit input from stakeholders, improve program design, and foster accountability and transparency	Implementing automation tools Adopting remote work technologies Utilizing data analytics tools Using mobile applications Implementing technology-enabled feedback mechanisms Implementing online fundraising platforms Leveraging digital marketing tech E-learning platforms provided skill-building opportunities
Interviewee 2	* Adopting remote work technologies facilitate virtual teamwork and flexibility * Utilizing data analytics tools to analyze program performance, donor behavior, and community needs, enabling data-driven decision-making and resource allocation * Implementing online fundraising platforms and crowdfunding campaigns helped reach wider audiences, and mobilize	

	support for social causes.	
Interviewee 3	* Utilizing data analytics tools to analyze program performance, donor behavior, and community needs, enabling data-driven decision-making and resource allocation * Leveraging digital marketing tech and platforms helped to raise awareness, attract donors, and engage stakeholders cost-effectively	
Interviewee 4	* Implementing automation tools for routine tasks free up staff time for higher-value activities. * Using mobile applications to deliver services, disseminate educational content, and collect feedback from beneficiaries, enhanced accessibility and user engagement * E-learning platforms provided skill-building opportunities for staff, volunteers, and beneficiaries, fostering continuous learning and capacity building.	

Interviewee 5	* Implementing automation tools for routine tasks free up staff time for higher-value activities. * Leveraging digital marketing tech and platforms helped to raise awareness, attract donors, and engage stakeholders cost-effectively * Implementing technology-enabled feedback mechanisms such as surveys, polls, and online forums to solicit input from stakeholders, improve program design, and foster accountability and transparency	
Interviewee 6	* Adopting remote work technologies facilitate virtual teamwork and flexibility * Leveraging digital marketing tech and platforms helped to raise awareness, attract donors, and engage stakeholders cost-effectively * E-learning platforms provided skill-building opportunities for staff, volunteers, and beneficiaries, fostering continuous	

	learning and capacity building.	
Interviewee 7	* Using mobile applications to deliver services, disseminate educational content, and collect feedback from beneficiaries, enhanced accessibility and user engagement	
Interviewee 8	* Implementing automation tools for routine tasks free up staff time for higher-value activities. * Adopting remote work technologies facilitate virtual teamwork and flexibility * Implementing technology-enabled feedback mechanisms such as surveys, polls, and online forums to solicit input from stakeholders, improve program design, and foster accountability and transparency	
Interviewee 9	* Using mobile applications to deliver services, disseminate educational content, and collect feedback from beneficiaries, enhanced accessibility and user	

	engagement	
Interviewee 10	* Utilizing data analytics tools to analyze program performance, donor behavior, and community needs, enabling data-driven decision-making and resource allocation * Leveraging digital marketing tech and platforms helped to raise awareness, attract donors, and engage stakeholders cost-effectively	

The strategies that use technology have been helpful in increasing the productivity of organizations as they are able to offload most of the repetitive tasks to the automation tools, from the experience of 4 participants. Moreover, participating in the implementation of modern conceptualizations of work and apply and experiment with technologies of working remotely that increase the opportunities of teamwork and flexibility was noted by 4 participants and was viewed as improving collaboration. Four of the respondents noted the significance of leveraging data analytics for tracking program outcomes, observing donors' behavior, and identifying the necessities of the target population to optimize providers' decisions. Also, four participants mentioned that using online tools and digital marketing technologies and platforms to raise awareness, promote the need for funding, and communicate with stakeholders was possible at a low cost. All the 4 adherents pointed of the employing apps to explore and disseminate services as well as education content; collecting feedbacks from beneficiaries in order to increase access and utilization reinforced it. Responding to the question on similarly implemented solutions to increase public engagement and

feedback response, participant 3 elaborated: Moreover, utilizing social media and other focused online tools to expand the potential base of donors and supporters for social purposes was stated by 1 participant; Whereas, using Web 2. 0 tools for organizing online fund-raising and for launching crowdfunding campaigns to draw as many people's attention as possible to certain social issues, was also described by 1 respondent; While 2 participants pointed at using Web 2. 0 tools as platforms for e-learning carrying Such observations show the stakeholders' agreement on the suitability of tech-driven approaches to making productivity gains across various facets and leveraging such tools as automation, data analytics, and communication with different interest groups.

5. How AI and other technologies can be leveraged to enhance the internal operations of social enterprises?

Respondents	Responses	Initial Codes
Interviewee 1	* Helped streamline routine tasks such as data entry, document processing, and administrative workflows, reducing manual effort and increasing productivity	Helped streamline routine tasks Utilizing AI-powered data analytics tools Using technology has helped to remotely monitor project activities
Interviewee 2	* Utilizing AI-powered data analytics tools helped to extract insights, and identify trends related to program performance, donor behavior, and community needs, informing strategic decision-making	
Interviewee 3	* Using technology has helped to remotely monitor project activities, track progress, and evaluate outcomes in real-time, improving transparency and accountability.	
Interviewee 4	* Utilizing AI-powered data analytics tools helped to extract insights, and identify trends related to program	

	performance, donor behavior, and community needs, informing strategic decision-making	
Interviewee 5	* Helped streamline routine tasks such as data entry, document processing, and administrative workflows, reducing manual effort and increasing productivity	
Interviewee 6	* Using technology has helped to remotely monitor project activities, track progress, and evaluate outcomes in real-time, improving transparency and accountability.	
Interviewee 7	* Helped streamline routine tasks such as data entry, document processing, and administrative workflows, reducing manual effort and increasing productivity	
Interviewee 8	* Using technology has helped to remotely monitor project activities, track progress, and evaluate outcomes in real-time, improving transparency and accountability.	

Interviewee 9	* Helped streamline routine tasks such as data entry, document processing, and administrative workflows, reducing manual effort and increasing productivity * Utilizing AI-powered data analytics tools helped to extract insights, and identify trends related to program performance, donor behavior, and community needs, informing strategic decision-making	
Interviewee 10	* Using technology has helped to remotely monitor project activities, track progress, and evaluate outcomes in real-time, improving transparency and accountability.	

Regarding the effectiveness of the internal processes of social enterprises, the potential of AI and other technologies can be accentuated, given that numerous monotonous activities, including data entry, document flow, and administrative chores, may be automated, thus lessening the workload, as most participants observed (5 out of 10). Also, the information gained from using data analysis tools involving the AI technology to learn and analyze aspects of the program and donors and social needs was described by 4 participants and signifying how it helps in making decisions. Also, the fact of being able to observe the project activities, observe performances, and review results in

real time helped 5 respondents to highlight the importance of the solution. These opinions demonstrate unanimous approval of AI and technology to enhance outcomes, decisions, and the degree of openness in social enterprises.

6. How AI and other associated technologies can be leveraged for your enterprise's ability to reach and engage its target individuals?

Respondents	Responses	Initial Codes
Interviewee 1	* Implementing AI-powered chatbots and virtual assistants to provide instant support, answer queries, and facilitate interactions with target individuals across multiple channels, enhancing engagement and responsiveness * To analyze social media posts, customer feedback, and online reviews to gauge sentiment and identify opportunities for engagement or intervention	Implementing AI-powered chatbots and virtual assistants Utilizing AI algorithms To analyze social media posts, customer feedback, and online reviews Help in behavioral segmentation of stakeholders Social listening to engage in relevant conversations Deploying AI-driven marketing automation platforms
Interviewee 2	* Utilizing AI algorithms to analyze user preferences, behavior, and demographics, and deliver personalized content recommendations through targeted advertising, email campaigns, and social media	
Interviewee 3	* To analyze social media posts, customer feedback, and online reviews to gauge	

	sentiment and identify opportunities for engagement or intervention	
Interviewee 4	* Implementing AI-powered chatbots and virtual assistants to provide instant support, answer queries, and facilitate interactions with target individuals across multiple channels, enhancing engagement and responsiveness * To analyze social media posts, customer feedback, and online reviews to gauge sentiment and identify opportunities for engagement or intervention	
Interviewee 5	* Help in behavioral segmentation of stakeholders * Social listening to engage in relevant conversations to build relationship and credibility	
Interviewee 6	* To analyze social media posts, customer feedback, and online reviews to gauge sentiment and identify opportunities for engagement or intervention	

	* Deploying AI-driven marketing automation platforms to design and execute targeted outreach campaigns and track engagement metrics, increasing efficiency and scalability.	
Interviewee 7	* Deploying AI-driven marketing automation platforms to design and execute targeted outreach campaigns and track engagement metrics, increasing efficiency and scalability.	
Interviewee 8	* To analyze social media posts, customer feedback, and online reviews to gauge sentiment and identify opportunities for engagement or intervention * Social listening to engage in relevant conversations to build relationship and credibility	
Interviewee 9	* Help in behavioral segmentation of stakeholders * Social listening to engage in relevant conversations to build relationship and	

	credibility	
Interviewee 10	* Utilizing AI algorithms to analyze user preferences, behavior, and demographics, and deliver personalized content recommendations through targeted advertising, email campaigns, and social media * To analyze social media posts, customer feedback, and online reviews to gauge sentiment and identify opportunities for engagement or intervention * Social listening to engage in relevant conversations to build relationship and credibility	

On average, participants believed that AI and related technologies had the potential to greatly strengthen an enterprise's capacity for customer contact by ascertaining the tone and perceived satisfaction level, as well as other sentiments, based on posts, feedbacks, and online reviews, to find out where and when they can engage the target individuals or when they should intervene (7 out of 10). Also, the use of natural language prompts and proactive personalised communications with the implementation of artificial intelligence based chat bots and virtual assistants was mentioned by 3 respondents revealing its significance in fashioning interaction and engagement. Another trend (5 from 10) was focused on the AI algorithms use to analyze the preferences, activity

and demographics of the users and clients to provide them with the interesting related content through advertising, mailing and social networks. Four respondents pointed towards social listening for establishing and creating conversations so as to develop the required reputation. Three participants mentioned using AI-driven marketing automation tools for developing and implementing target outreach campaigns and analyzing the metrics of engagements, which established the benefits of the technology on the campaign's approachability. Another aspect where the organisations expected AI to be useful was the identified behavioural segmentations of stakeholders, highlighted by 3 respondents. These insights suggest that leveraging AI for sentiment analysis, personalized recommendations, automation, and social listening are seen as pivotal strategies for enhancing engagement and outreach efforts.

APPENDIX D: QUESTIONNAIRE DEVELOPMENT

On

Role of Technology in Enhancing Scalability and Impact of Social Enterprises

This questionnaire is developed to collect pertinent information from owners and employees of social enterprises regarding how technology is affecting their scalability and impact. More particularly, the study intends to collect relevant data from these respondents about how Artificial Intelligence (AI) and other modern technology are helping these enterprises in enhance their operations and reach. The Questionnaire given below is a tool chosen for collecting data for the research project titled **"Role of Technology in Enhancing Scalability and Impact of Social Enterprises".** The participants are requested to respond attentively to all of the below-mentioned questions. The respondents are assured that the information they provide will be used for research purposes only and will be kept confidential and un-identifiable to an individual or organisation.

Part A: Demographic Information

Please select one appropriate option in the below-mentioned questions.

1. Age (in Years)
    a. 18-30
    b. 31-40
    c. 41-50
    d. 51-60
    e. 60 and above
2. Gender
    a. Male

b. Female

c. None-Binary

d. Prefer not to disclose

3. Educational Qualification:

a. No Education

b. Primary Education

c. High School or Equivalent

d. Diploma

e. Graduate

f. Post Graduate

g. Doctorate or Equivalent

4. Years of Experience in Social Enterprise Sector

a. Less than 1 year

b. 1-2 years

c. 3-5 years

d. 6-10 years

e. More than 10 years

5. Marital Status

a. Married

b. Unmarried

c. Divorced

Part B: Relevance of Technology in Social Enterprises

On a scale of 1-5, please indicate the degree to which you agree to the statements given below based on your experience. (SD = Strongly Disagree, D = Disagree, N = neither Agree nor Disagree, A = Agree, SA = Strongly Agree)

Statements	SD	D	N	A	SA
1. Artificial intelligence (AI) and other modern technologies are essential for the growth of social enterprises.					
2. I believe that AI and other modern technologies enhance the impact of social enterprises on their target communities.					
3. AI and other modern technologies can play a significant role in improving the efficiency of social enterprises.					
4. AI and other technologies play a key role in managing day to day operations of social enterprises.					
5. AI and other technologies are essential in addressing social and environmental					

challenges.					

Part C: Social Enterprises

On a scale of 1-5, please indicate the degree to which you agree to the statements given below based on your experience. (SD = Strongly Disagree, D = Disagree, N = Neither Agree nor Disagree, A = Agree, SA = Strongly Agree)

Statements	SD	D	N	A	SA
6. Social enterprises play a significant role in addressing social and environmental issues.					
7. Social enterprises quite effectively contribute to the economic development of communities.					
8. Social enterprises are effective in bringing about positive social changes.					
9. Social enterprises can be quite innovative while dealing with social and environmental challenges.					
10. Social enterprises have a significant impact on fulfilling local communities' needs.					

Part D: Technological-driven Strategies

On a scale of 1-5, please indicate the degree to which you agree to the statements given below based on your experience. (SD = Strongly Disagree, D = Disagree, N = Neither Agree nor Disagree, A = Agree, SA = Strongly Agree)

Statements	SD	D	N	A	SA
11. Technology-driven strategies can enhance the efficiency of social enterprises.					
12. To maintain competitiveness in the market, social enterprises need to adopt technology-driven strategies.					
13. Technology-driven strategies are essential for the growth and sustainability of social enterprises.					
14. Technological-driven strategies are quite effective improve the impact of social enterprises on their target communities					
15. Our enterprise is likely to invest in technology-driven strategies in the next 5 years.					

Part E: Challenges Faced by Social Enterprises while Integrating Technology in their Business Operations.

On a scale of 1-5, please indicate the degree to which you agree to the statements given below based on your experience. (SD = Strongly Disagree, D = Disagree, N = Neither Agree nor Disagree, A = Agree, SA = Strongly Agree)

Statements	SD	D	N	A	SA
16. It is quite difficult for social enterprises to select the right technological solutions for their particular requirements.					
17. It is quite challenging for social enterprises to keep up with the rapid pace of technological advancements.					
18. Financial constraints affect the effective integration of technology in the business operations of social enterprises.					
19. A lack of technological expertise within social enterprises makes integrating technologies difficult.					
20. Staff training and capacity building are major barriers to integrating technology in					

business operations.					

Part F: Using AI and Other Technologies for Internal Operations of Social Enterprises.

On a scale of 1-5, please indicate the degree to which you agree to the statements given below based on your experience. (SD = Strongly Disagree, D = Disagree, N = Neither Agree nor Disagree, A = Agree, SA = Strongly Agree)

Statements	SD	D	N	A	SA
21. The utilisation of technologies such as AI has the potential to improve the operational efficiency of social enterprises.					
22. AI and other modern technologies can boost the productivity of social organisations.					
23. Modern technologies promote collaboration and communication among the employees of social enterprises.					
24. AI and associated technologies have the potential to streamline decision-making processes within our enterprise.					

25. AI can effectively automate routine tasks within our enterprise.					

Part G: Using AI and Other Technologies for External Reach of Social Enterprises.

On a scale of 1-5, please indicate the degree to which you agree to the statements given below based on your experience. (SD = Strongly Disagree, D = Disagree, N = Neither Agree nor Disagree, A = Agree, SA = Strongly Agree)

Statements	SD	D	N	A	SA
26. AI and other modern technologies are quite effective in analysing the data of the target population and improving their experience.					
27. AI and associated technologies can play a significant role in enhancing our organisation's ability to attract and retain donors and funders.					
28. AI and other technologies have enhanced our social enterprise's marketing and branding efforts.					
29. The use of AI and other modern technologies has the potential to improve					

the ability of social enterprises to reach and engage with target communities.					
30. Modern technologies help our organisation identify and connect with potential partners and collaborators.					
31. AI and other technologies enable social enterprises to adapt to changing market trends.					
32. AI and associated technologies have expanded our enterprise's reach and influence.					

Part H: Qualitative Questions:

1. What role do modern technologies play in the operations of social enterprises?
2. What are the primary challenges your organisation faces while adopting modern technologies?
3. What are the specific best practices that contributed to the scalability of your organisation?
4. How technology-driven strategies have contributed to the productivity of your organisation?
5. How AI and other technologies can be leveraged to enhance the internal operations of social enterprises?

6. How AI and other associated technologies can be leveraged for your enterprise's ability to reach and engage its target individuals?