Study on How Technological Development and Digital Transformation are Applied in Social Organizations in Transforming Themselves to Gain Efficiency and Leadership Competency

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Abstract— *This study explores the application of technological development and digital transformation in social organizations, focusing on their transformative potential in achieving efficiency and leadership competency. The research investigates how social organizations leverage technological advancements to enhance their operations, decision-making processes, and overall effectiveness. Through a comprehensive analysis of existing literature and primary data that collected through structured interviews form a non-random sample of 38, this study has aimed to address the strategies, challenges, and outcomes associated with implementing technology-driven transformations in social organizations. The main objective of the study is to examine how technological development and digital transformation are applied in social organizations to enhance their efficiency and gain leadership competency. The findings provide valuable insights into the multifaceted nature of digital transformation, including its impact on organizational efficiency and leadership competency. By understanding the dynamics of technological development and its role in the context of social organizations, this study contributes to the existing body of knowledge and provides practical implications for stakeholders involved in driving organizational change*

Keywords— **Technological development, digital transformation, social organizations, efficiency, leadership competency, technology-driven transformations, organizational change.**

I. INTRODUCTION

Social organizations, such as advocacy groups, NGOs, and community organizations, are formed to address social issues and humanitarian objectives. These organizations rely on member support, volunteerism, donations, and government grants to achieve their goals. In contemporary management discourse, digitization, digitalization, and digital transformation are considered important objectives (Hesse, 2015; Avis, 2018). Digitization involves converting analog information into digital formats, while digitalization refers to the reorganization of social life around digital communication and media infrastructures. Digital transformation encompasses the use of digital technologies to improve organizational features and bring about major changes (Parida et al., 2019; Avis, 2018).

Social organizations are undergoing digital transformations to enhance their efficiency, connect with supporters, raise funds online, access data, and use analytics for decision-making (Porter & Heppelmann, 2015). Effective leadership is crucial in driving successful digital transformations by anticipating change, creating a vision, mobilizing support, and implementing structures that promote desired behaviors. Digital transformation revolutionizes businesses, transforming their products, operations, and value creation pathways. It requires comprehensive initiatives that encompass changes in strategy, culture, structure, procedures, and business models (Earley, 2014). Digital transformation also creates opportunities for social organizations to empower marginalized groups, enhance inclusivity, and foster innovation. Technology development and the digital era improve the efficiency and capabilities of social organizations (Warner & Wager, 2019).

Digital tools, automation, cloud computing, and social media play significant roles in streamlining operations, data management, fundraising, and communication. However, challenges exist in implementing digital transformation, particularly in developing nations where cost is a concern (Di Maio, 2014). Understanding the sociotechnical system theory and optimizing social and technical systems are important for successful digital transformations in organizations. Digital technologies, such as the internet of things, cloud computing, artificial intelligence, and big data, are driving the shift towards digitalization in businesses (Earley, 2014). While the terms "digital transformation" and "digitalization" are often used interchangeably, digital transformation refers to broader organizational changes, while digitalization focuses on business models and digital components of products and services decisions (Porter & Heppelmann, 2015; Autio et al., 2018).

Academics have studied digital transformation in businesses, focusing on its key components. According to previous research, a digital transformation strategy consists

of four essential elements: technology adoption, changes in value generation, structural changes, and financial concerns. Creating specialized digital transformation units within companies can help develop efficient strategies by facilitating governance and collaboration (Hesse, 2018).

However, most studies have focused on how digital transformation is being implemented in established companies. Researchers have identified nine major obstacles that firms must overcome when transitioning to a digital business model, including the lack of tools and concepts for digitization, unclear migration scenarios, organizational and management challenges, problems with the organizational structure, limited cooperation and collaboration, resource limitations, low awareness, unsupportive culture, and lack of competencies. Overcoming these obstacles is crucial for effective digital transformation.

The linkages between digital innovation, business model innovation, and the development of dynamic capabilities for digital transformation have been emphasized. Empirical investigations are needed to understand the actual processes companies go through during their digital transformation journeys.

The increasing dependence on digital products and services by individuals, businesses, and society has brought significant changes to enterprises. Examples like Uber, Facebook, Alibaba, and Airbnb demonstrate the disruptive potential of digitalization. Traditional business models may require re-evaluation in light of the digital economy's future implications, and industry arrangements may face significant transformations or pressure (Avis, 2018). The digital world presents opportunities for emerging niche players while also leading to a winner-take-all effect. Businesses need to disrupt their own strategies, leverage new digital technologies, and adapt to changing customer preferences and employee behaviors (Hesse, 2015). Understanding the digital value chain, focusing on the customer, adapting to employee attitudes, utilizing modern communication and collaboration methods, and recognizing opportunities in both B2C and B2B markets are crucial. Neglecting digital developments can lead to the downfall of well-established companies (Warner & Wager, 2019).

The research problem at hand pertains to the limited comprehension and empirical evidence surrounding the implementation of technological advancements and digital transformation within social organizations. Consequently, there is a pressing need to explore and comprehend the strategies, impacts, and barriers associated with the adoption of technology and digital transformation within social organizations. By addressing this issue, the study

aims to offer useful ideas and insights to social organizations who want to use technology to improve their organizations and perform better.

The main objective of the study is "to examine how technological development and digital transformation are applied in social organizations to enhance their efficiency and gain leadership competency". The specific objectives are to o explore the current technological landscape in social organizations and identify the key technological advancements and digital transformation strategies being implemented, to assess the impact of technological development and digital transformation on the operational efficiency of social organizations, to examine the role of technological innovation in enhancing the leadership competency of social organizations, to identify the challenges and barriers faced by social organizations in adopting and implementing technological solutions for transformation, to provide recommendations and best practices for social organizations to effectively leverage technological development and digital transformation to enhance their efficiency and leadership competency, to contribute to the existing body of knowledge on the application of technology in social organizations and its implications for their overall performance and social impact.

II. LITERATURE REVIEW

In recent times, the strategic progression of organizations across various sectors has been significantly influenced by the advancement of technology and the process of digital transformation. This review of literature intends to investigate the utilization of these advancements within social organizations, aiming to trigger substantial modifications that result in improved operational efficiency and more effective leadership capabilities. As articulated by Brynjolfsson and McAfee (2014), technological development encompasses the gradual evolution and assimilation of diverse digital tools, while digital transformation involves a comprehensive overhaul of processes to effectively harness these tools. Within the realm of social organizations, which encompass entities like non-profits, NGOs, and community-focused groups, the need to optimize efficiency while concurrently nurturing robust leadership proficiencies is especially emphasized. Academic experts such as Avgerou (2018) and Westerman et al. (2014) describe the potential impact of technologies such as cloud computing, data analytics, and artificial intelligence in simplifying operations and amplifying decision-making procedures. Moreover, they draw attention to the capacity of these innovations to enhance leadership acumen through mechanisms such as real-time insights provision, collaborative facilitation, and the enabling of data-driven strategic adaptations.

It has become evident that in today's digital age, social organizations must embrace technological advancements and undertake digital transformation initiatives to stay competitive and relevant. The review has highlighted several ways in which technological development can enhance efficiency within social organizations, including process streamlining and resource optimization. Furthermore, it has emphasized the crucial role of leadership competency in driving and managing digital transformation, emphasizing the need for leaders to possess skills such as digital literacy, strategic thinking, adaptability, and change management. By analyzing case studies and examples, this review has provided valuable insights into successful implementations of technology and digital transformation in social organizations, while acknowledging the associated challenges. The previous research findings describes the importance of aligning technology initiatives with organizational goals and strategies, as well as fostering a supportive culture that embraces innovation and change. Looking ahead, it is recommended that social organizations proactively invest in technological development and digital transformation, taking into account the unique characteristics and needs of their respective sectors. Leaders within these organizations should prioritize the development of necessary competencies to navigate the digital landscape effectively and guide their teams through transformative change. Collaborative efforts between social organizations, research institutions, and technology providers can facilitate knowledge sharing and the adoption of best practices. In summary, this literature review contributes to the understanding of how social organizations can leverage technological development and digital transformation to enhance efficiency and leadership competency

IV. METHODOLOGY

The sample for the study on how technological development and digital transformation are applied in social organizations to gain efficiency and leadership competency using semi-structured interviews consisted of individuals who have direct involvement or expertise in technology adoption and digital transformation initiatives within social organizations. The research population had through the pilot research population of the study was 42 and it was decided to relate the population of the pilot sample to be met as the sample of the study population and decide the size of the sample according to the formula by Cochran (1977) and the final sample size of 38 participants (n=38) provided a sufficient depth and breadth of information for mex method research studies.

Semi-structured interviews and Likert scale questionnaires have been conducted for collecting primary data and secondary data was collected through multiple resources, including scholarly publications, business analyses, tautest reports, internet articles, and case studies of social

organizations that have successfully adopted technological advancement and the digital revolution. To analyse qualitative data, it is used thematic analysis as one the qualitative data analysis technique to achieve research objectives. The generated themes will support to achieve the objectives. The researcher employed SPSS to generate charts. Microsoft Excel, on the other hand for data management and analysis. The research was following a deductive method in process.

V. RESULTS

i. Technological Development and Digital Transformation Initiatives of the Social Organizations

The research findings suggest that social organizations have made significant progress in technological development and digital transformation initiatives. The majority of respondents rated their level of technological development as moderate, high, or very high according to Likert scale. In terms of digital transformation, most organizations had undergone partial transformation, while a smaller percentage reported complete transformation, and a few had not undergone any transformation. Cloud computing emerged as the most implemented digital technology among social organizations, followed by the Internet of Things (Imran et al., 2018; Hallikainen et al., 2017; Warner & Wager, 2019)

Artificial intelligence and big data analytics were implemented to a lesser extent, although some organizations mentioned using combinations of these technologies. The timelines for implementing technological development and digital transformation initiatives varied, with a duration of 10 years being the most commonly mentioned. The motivations for adopting these initiatives were diverse. Efficiency and effectiveness, cost reduction, and gaining a competitive advantage were among the most common motivations. Other motivations included adapting to global shifts, improving decision-making processes, simplifying tasks, and responding to the effects of the COVID-19 pandemic. Overall, the research highlights the progress made by social organizations in embracing technological innovation and digital transformation. While there is a range of advancements across different organizations, the majority perceive their level of advancement as moderate to high. Cloud computing and the Internet of Things are prevalent technologies, while artificial intelligence and big data analytics are less widely implemented. The motivations for adoption encompass various goals, from improving efficiency to adapting to changing circumstances and reducing costs (Autio et al., 2018; Imran et al., 2018; Hallikainen et al., 2017).

ii. Level of Technological Development and Digital Transformation

The data indicates that social organizations have recognized the importance of technological development and digital transformation initiatives in driving positive changes and improvements. Comprehensive training and upskilling programs were identified as a priority, highlighting the organizations' commitment to equipping their workforce with the necessary skills to adapt to digital technologies and processes. Developing a clear digital transformation strategy and establishing effective change management procedures were also considered crucial, emphasizing the value of strategic planning and efficient management of organizational change. A portion of respondents mentioned the employment of technology consultants or professionals, indicating the organizations' willingness to seek external expertise to support their digital transformation efforts. Some respondents mentioned combinations of measures, including comprehensive training, strategy development, and change management processes, demonstrating an understanding of the interconnected nature of these initiatives. The impact of technological development and digital transformation on efficiency and productivity was evident from the responses. Positive changes included better data availability and utilization, quicker and informed decision-making, enhanced productivity, reduced paperwork, improved communication and collaboration, and increased trust among stakeholders. However, a small proportion of respondents did not observe any changes, and a few responses were unclear or ambiguous. In conclusion, the data emphasizes the significance of investing in comprehensive training, strategic planning, change management, and external expertise to drive successful digital transformation in social organizations.

iii. Drivers and Motivations for Technological Development and Digital Transformation

The data reveals that the primary driver for technological development and digital transformation in the surveyed social organizations is improved efficiency, as indicated by the majority of respondents (71.1%). This suggests that organizations prioritize using technology to streamline processes, increase productivity, and achieve better outcomes. Cost reduction was also recognized as a significant motivation, selected by 13.2% of respondents, indicating an awareness of technology's potential to optimize resource allocation and reduce operational expenses. Enhanced leadership competency was chosen as the primary driver by 15.8% of respondents, highlighting the acknowledgment that technology can equip leaders with the necessary tools and insights to make informed decisions and drive organizational success. Other motivations mentioned include gaining a competitive edge, improving communication with donors, accessing information easily, organizational development and survival, and meeting emerging needs. These motivations demonstrate the multifaceted benefits organizations expect to attain through technological development and digital transformation. Overall, the findings emphasize the importance of leveraging technology to improve efficiency, reduce costs, enhance leadership capabilities, and address various organizational needs in social organizations.

iv. Efficiency and Operational Impact

The data provides several important insights into the impact of technological development, challenges faced during digital transformation, and changes in company culture within social organizations. Technological development has significantly contributed to the efficiency of social organizations, according to 42.1% of respondents. This includes improved data management and analysis, streamlined processes and workflows, and enhanced communication and collaboration. Integration issues with existing systems and resistance from employees were identified as prominent challenges during digital transformation, along with limited financial resources and a lack of technological expertise. Overcoming these challenges requires careful planning, change management strategies, training, and adequate resources.

Digital transformation has had a notable impact on company culture, as mentioned by 39.5% of respondents. It has fostered an innovative and adaptable culture, enhanced employee engagement and satisfaction, and increased collaboration and teamwork. These impacts highlight the positive influence of digital technologies on employee motivation, creativity, and collaboration within the organization. In terms of specific impacts on operational processes, 44.7% of respondents mentioned that technological development and digital transformation streamline processes and workflows within social organizations, resulting in increased efficiency. Additionally, 26.3% of respondents highlighted that technological development and digital transformation reduce the need for human resources, indicating the potential of automation and digital tools to automate tasks and reduce reliance on manual labor. Furthermore, 13.2% of respondents mentioned that technology reduces miscommunication with stakeholders, facilitating effective communication and information sharing. Another 13.2% of respondents noted that technology adoption reduces costs and overheads by streamlining operations and eliminating manual processes. Overall, the data emphasizes the positive impact of technological development and digital transformation on the efficiency, communication, collaboration, and culture within social organizations. It

also highlights the challenges faced during the digital transformation process and the need for careful planning and resources to overcome them successfully.

v.   Leadership Competency and Organizational Impact

The data indicates that digital transformation has significantly impacted leadership competency within social organizations. According to 36.8% of survey participants, leadership across the board has been affected by the digital transition. Improved strategic planning capabilities (23.7%) have emerged as a critical factor in enhancing leadership competency. Leaders now have the skills and resources to enhance strategic planning, make informed decisions, and establish practical corporate objectives. Improved decision-making processes (18.4%) have also been highlighted, with digital transformation providing leaders access to real-time data, advanced analytics, and predictive modeling for data-driven decision-making. Additionally, digital transformation has increased adaptability to change (7.9%), enabling leaders to respond effectively to rapidly changing environments, embrace innovation, and navigate complex challenges.

Increased adaptability to change (13.2%) was mentioned as another significant impact on leadership competency, fostering a mindset of flexibility, resilience, and the ability to drive change within the organization. The data suggests that digital transformation has significantly influenced leadership competency by enhancing strategic planning capabilities, improving decision-making processes, and increasing adaptability to change. These impacts contribute to developing agile and effective leaders who can guide their organizations through digital transformation and succeed in a rapidly evolving environment. The data also reveals that leadership plays a crucial role in driving technological advancement and digital transformation. According to 42.1% of respondents, leadership influences these areas. Distribution of funds for technological investments (13.2%) emerged as an important leadership function, requiring leaders to secure and allocate the appropriate financial and human resources to support technology investments. Encouraging innovation and risk-taking (10.5%) was highlighted, emphasizing the importance of leaders fostering a culture of innovation and inspiring teams to explore new technologies and drive transformation. Vision-setting and strategic planning (21.1%) were identified as crucial leadership functions, enabling leaders to align technical development activities with the organization's goals and objectives. Some respondents mentioned positions that combined these leadership functions.

vi.   Role   of   Leadership   in   driving   technological development and digital transformation

The provided data highlights the impact of technological development and digital transformation on leadership competency within organizations. It reveals that technology has positively influenced decision-making processes, efficiency, and communication within leadership roles. Leaders have adapted their behavior, prioritized learning and adaptation, and embraced technology to drive organizational success. While some respondents reported no significant changes in organizational structure or leadership roles, others mentioned adjustments such as reduced personnel or changed job descriptions. The data indicates that digital transformation has made it easier for executives to access real-time data and advanced analytics, leading to more efficient and data-driven decision-making. It has also fostered a mindset of flexibility and resilience among leaders, enabling them to navigate complex challenges and embrace innovation. A significant proportion of respondents (36.8%) believed that digital transformation has had a comprehensive impact on leadership competency across various aspects, indicating its significant influence on leadership within social organizations. When examining the role of leadership in driving digital transformation, respondents highlighted the importance of leaders securing and allocating necessary resources to support technology investments (13.2%). They also emphasized the role of leaders in fostering a culture of innovation, experimentation, and risk-taking (10.5%) to inspire teams and drive digital transformation. Additionally, leaders were seen as providing a clear vision and strategic direction for technological development efforts (21.1%), aligning them with overall organizational goals. Some responses mentioned a combination of roles, highlighting the multifaceted nature of leadership's role in driving technological development and digital transformation. Efficiency was a common theme associated with leadership competency, including aspects such as effectiveness, productivity, and resource optimization. Leadership competency itself was described as a set of skills and behaviors that contribute to superior performance, encompassing adaptability, vision, clear communication, integrity, teamwork, conflict management, and meeting global standards.

vii.   Impact on Stakeholder Relationships and Beneficiaries and   Security   and   Privacy   in   the   Digital Transformation Process

The implementation of digital technologies in social organizations has brought positive impacts in various areas. Firstly, it has improved the accessibility of services and resources for recipients, making them more readily available. Secondly, the adoption of digital technologies

has increased transparency and accountability within these organizations, fostering trust and accountability through greater transparency in operations and decision-making. The integration of digital technologies has also positively affected social organizations' relationships with clients and stakeholders. It has enhanced communication, engagement, and openness, leading to stronger bonds and successful collaborations. Organizations have taken measures to ensure data security and privacy, including complying with regulations, conducting regular data audits, and implementing robust cybersecurity measures. These measures aim to protect sensitive information, address vulnerabilities, and safeguard digital systems and networks from unauthorized access and cyber threats. The data emphasizes the significant positive changes brought about by the implementation of digital technologies in social organizations, benefiting both the organizations themselves and their clients/stakeholders. By employing a combination of measures such as compliance, data audits, and cybersecurity practices, organizations strive to mitigate risks, protect data, and maintain trust and confidence among their stakeholders. It is crucial for organizations to continuously update and adapt their security measures to stay ahead of evolving threats and technologies in the digital landscape.

VI. DISCUSSION

A. Adoption and Integration of Technology

To successfully adopt and integrate technology, social organizations need a clear implementation strategy that includes stakeholder identification, timeline establishment, expectation management, and efficient resource allocation. Common challenges in this process include resistance to change, lack of technical expertise, financial constraints, and data security concerns. Overcoming these challenges requires change management strategies, investment in training and capacity building, and addressing security and privacy issues. Cultivating a technology-driven culture, promoting a learning environment, and providing support and training to employees are crucial for successful technology adoption and integration. The benefits of technology adoption and integration in social organizations include increased operational efficiency, task automation, improved data management and analysis, enhanced communication and collaboration, and empowering employees to make data-driven decisions. Technology integration also enables organizations to adapt to change, tackle challenges, and enhance leadership competency through strategic decision-making. In conclusion, effectively incorporating technology into social organizations is essential for improving efficiency and leadership competency. By understanding the strategies, challenges, and outcomes associated with technology adoption and integration, social organizations can leverage

technological advancements to transform themselves and achieve their goals in the rapidly evolving digital landscape.

B. Transformational Impact on Efficiency

This work explores how technological advancements and digital transformation enhance efficiency in social organizations. Techniques such as resource optimization, automation, and expedited procedures improve decision-making, reduce costs, and increase productivity. Automation, powered by AI and machine learning, replaces manual tasks, minimizes errors, and boosts productivity. Digital transformation optimizes resource allocation through data analytics and reporting tools, leading to cost savings and improved resource utilization. Digital tools facilitate collaboration and communication, resulting in smoother workflows and faster decision-making. Data-driven decision-making using gathered and analyzed data enhances resource management and productivity. Technological advancements and digital transformation create agile and responsive environments, enabling organizations to adapt quickly and meet stakeholders' evolving needs. These transformations significantly enhance efficiency, overall performance, and competitiveness in the digital age.

C. Leadership Competency and Skills Development

Effective leaders in Sri Lankan social organizations understand the potential of technology and actively embrace digital initiatives. They provide visionary guidance, set clear goals, and motivate their teams to adapt to technological changes, fostering innovation and increased efficiency. These leaders also develop their own digital skills and knowledge to competently lead in the digital era. They understand emerging technologies, data analytics, cybersecurity, and digital marketing, enabling them to guide and facilitate change within their organizations. Additionally, effective leaders recognize the importance of developing digital skills across their organizations. They invest in training and capacity-building initiatives to upskill their staff, fostering a culture of continuous learning and confident adaptation to technological changes. Sri Lankan leaders also address unique challenges such as limited digital infrastructure, the digital divide, and varying levels of digital literacy. They bridge these gaps by collaborating with stakeholders, forming public-private partnerships, and advocating for policies that promote digital inclusion and accessibility. In conclusion, equipped with digital skills and a forward-thinking mindset, effective leaders drive digital initiatives, foster innovation, and promote continuous learning in Sri Lankan social organizations. By investing in skills development and addressing contextual challenges, leaders

enhance efficiency, leadership competency, and maintain a competitive edge in the digital landscape.

D. Organizational Culture and Change

Leaders play a crucial role in fostering a culture that embraces change and digital transformation. They articulate a vision, inspire employees to take risks and experiment, and create a supportive environment. Organizational culture should promote a learning mindset, digital literacy, training programs, and collaboration to support technology adoption. A flexible and agile culture that values continuous improvement is necessary for sustained digital transformation and leadership competency. Effective change management practices, including clear guidance and addressing resistance, are vital for a smooth transition. By fostering an inclusive environment, leaders empower employees and ensure organizational agility and competitiveness. In conclusion, a culture of innovation, learning, and flexibility is essential for enhancing leadership skills and efficiency in the context of digital transformation. Effective leadership drives change and ensures organizational competitiveness in the digital era.

E. Ethical Considerations and Social Impact

Ethical considerations in technology adoption by social organizations encompass data privacy, security, transparency, fairness, and accountability. Organizations must prioritize individual privacy, handle sensitive data responsibly, and comply with legal requirements. They should assess the social impact of technology, considering stakeholders and addressing societal challenges. Ethical use of automation and AI involves transparency, fairness, and avoiding bias and discrimination. Organizations should practice responsible digital citizenship, bridging the digital divide and promoting inclusivity. Clear ethical guidelines and governance frameworks can guide digital transformation, while regular audits mitigate risks. By addressing ethical challenges, organizations can transform themselves, enhance efficiency, promote leadership competency, and contribute to societal well-being.

VII. CONCLUSION

This study explores the utilization of technology and digital transformation in social organizations to enhance efficiency and leadership competency. It covers various themes including technology adoption, impact on efficiency, leadership development, organizational culture, change management, and ethical considerations. The findings highlight the role of technology in improving operational efficiency and resource allocation. Effective leadership and the development of digital skills are crucial for successful technology implementation. Organizational culture and change management play a critical role in embracing technology and driving innovation. Ethical considerations and social impact must be addressed to ensure responsible and inclusive technology use. The study provides valuable insights and recommendations for social organizations looking to leverage technology for growth and success in the digital era. The study found that social organizations adopt and integrate technology to enhance efficiency and leadership competency, resulting in task automation, improved data management, and increased productivity. However, challenges such as limited resources, resistance to change, and data security concerns need to be addressed. Recommendations include developing a clear digital strategy, investing in leadership development, fostering an innovative culture, prioritizing data governance and security, promoting ethical practices, fostering collaborations, evaluating impact, providing training and support, adopting agile methodologies, and staying informed about technological trends. Implementing these recommendations will enable social organizations to navigate digital transformation effectively and achieve greater efficiency and social impact.

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Transforming Themselves to Gain Efficiency and Leadership Competency

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