Digital Innovation Management: A Study of How Firms Generate and Implement Digital Ideas

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Abstract

People and businesses are communicating online on a never-before-seen level. New digital behaviours, services, and products could result from these exchanges; these are all examples of digital innovation. Digital trace data, or user records left on various digital platforms that contain information about their activity, are the foundation of this procedure. Massive amounts of data are produced, but until they are given context, they are merely data with latent value. Digital trace data records interactions with digital artefacts and is available to a wide range of actors for reinterpretation as sources of innovation and value creation. It is not concerned with the usage of the data in the future. Although data-generating online communities might be creative places to be, they are also very susceptible. Digital trace data can be used and shared with any other person, partner, client, or supplier; they are not a limited resource. In order to stay competitive, businesses must handle the ever-changing dynamic interactions between members of online communities, deal with meaning-laden digital trace data, and support decentralised innovation that calls for a variety of knowledge resources. This study investigates the use of digital innovation inside online communities.

Keywords: Digital Transformation; Digital Innovation; Business Analytics.

I. INTRODUCTION

ICT has started to have a significant impact on businesses due to the rapid advancements in computing and communication technologies. Organisations are using ICT to redefine industry structure and competition, restructure organisational boundaries, and redesign business processes (Arvidsson & Mønsted, 2018). DT is being quickly adopted by ICT-enabled organisations. Through increased connectivity and recombination, DT is not only upending established firms but also improving their value propositions (Beliaeva et al., 2020). Big Data solutions, mobility, data analytics, Internet-of-things, and social media are examples of new generation ICT technology. All of these technologies are referred to as "digital technologies." To create a digital business model, several components of a traditional business model are swapped out for digital technologies. By creating, developing, and delivering superior value propositions, a digital business model redefines conventional value propositions.

From the perspective of a strategic process analysis, knowledge of the DT process is beneficial. The strategic process study offers three different kinds of conclusions: a) a causal relationship involving inputs and outputs (antecedents or drivers for DT in this case, and the outcome as DT); b) concepts or managerial actions like putting decisions and workflows into place; and c) new techniques to generate unique value propositions (Park & Hong, 2022). The purpose of this study is to attempt to address three open-ended questions. According to a recent study on digital adaptation, 84% of businesses today, globally, view digital transformation (DT) as essential to their survival. This finding was made by SAP (2017). Only 3% of the companies have even begun to use DT across the entire organisation. The findings of this study serve as a valuable resource for academics and practitioners starting their DT journeys, which is the driving force behind it. Furthermore, this report helps companies better plan for the deployment of DT. Figure 1 shows the Co-Occurrence Analysis of the Current Scientific Landscape below.

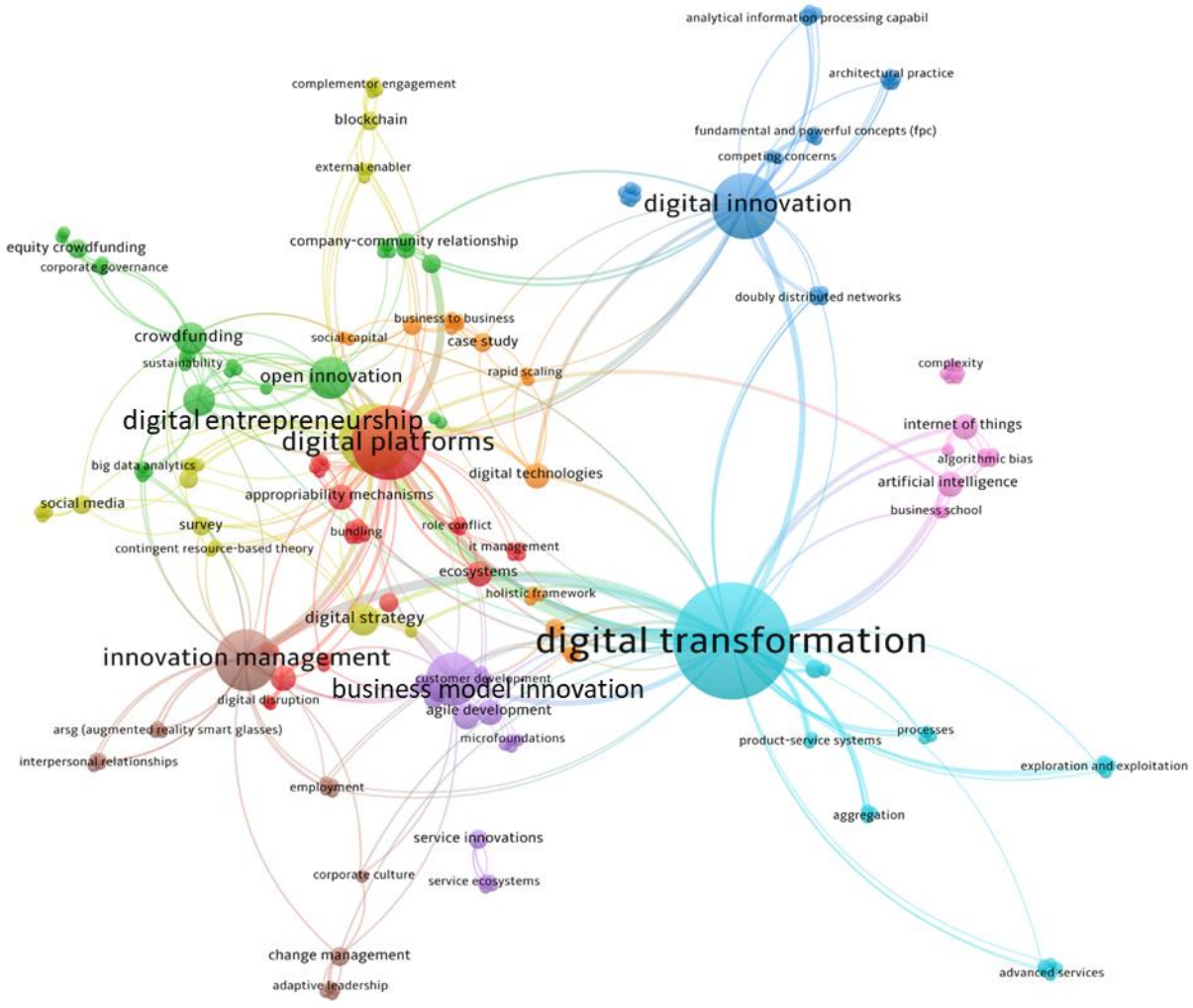

Figure 1: Co-Occurrence Analysis of the Current Scientific Landscape (Source: web)

The ICT system has always been seen as a support function, primarily concerned with providing information assistance for management and optimising resource usage. But as time has gone on, managers and organisations have come to understand that ICT use offers a new set of

competitive weapons by allowing them to redefine and push the boundaries of marketplaces and organisational structural features (Del Giudice et al., 2021). ICT is now essential to the day-to-day operations of the company and the accomplishment of all tasks, having previously only existed in the back office. ICT has been a major factor in helping businesses operate better, and as computing and communication technologies have advanced quickly, ICT, or information technology, has started to have a significant influence on businesses. ICT is being used by organisations to redefine industry structure and rivalry, change organisational boundaries and hierarchies, and rethink business processes (Chiaroni et al., 2011). ICT use won't significantly increase organisational performance if the required organisational changes aren't made. Organisations can implement Organisation Transformation (OT) or organisational change by utilising ICT resources and skills. The capacity to take advantage of the commercial opportunities that information technology (IT) creates has become essential to a company's long-term survival.

In this case, the introduction is examined in section 1 of the article. Section 2 describes the review of the work further Section 2 and 3 explains the goal of the work digital technologies, and Section 4 concludes the project.

II. LITERATURE REVIEW

Organisations are currently undergoing digital transformation, which differs from a typical disruptive scenario (Fichman et al., 2014). The "digital world" paradigm shift is centred on connectivity and recombination. The digital world is characterised by the digitisation of connections and interactions, the production and examination of data in unique ways, and the connecting of previously distinct people, objects, and activities. Digital technologies encompass a range of technologies such as mobile, social media, cloud, internet-of-things (IoT), analytics employing massively parallel, high-velocity, and diverse data, machine learning, and artificial intelligence approaches (Nasiri et al., 2023). By combining these digital technologies, a far higher consumer value may be delivered than in the past. All companies in the sector are being forced to compete in new ways by digital transformation (DT), which involves digitising formerly analogue service operations, organisational duties, and management processes (Nwankpa et al., 2022). One of the biggest issues facing organisations today is integrating, maximising, and assimilating digital technologies. Compared to products, corporate procedures, and supply networks, digital technology has a greater influence and the ability to significantly alter the market. Digital technology possesses three essential characteristics: Three things may be said about digital signals: a) they can be transferred flawlessly and error-free; b) they can be simulated endlessly; and c) the marginal cost of a transaction is nearly nil once the infrastructure is invested in. Figure 2 displays the Recursive Process of Theorizing and Data Collection.

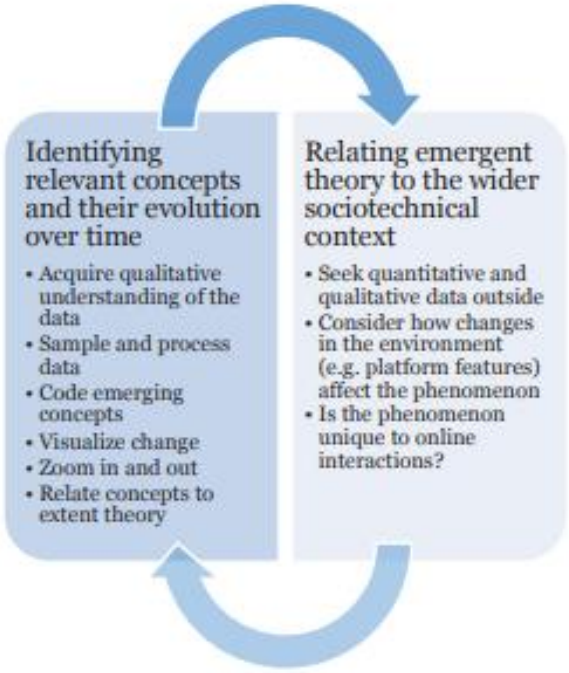

Figure 2: Recursive Process of Theorizing and Data Collection

Using digital technologies to transform an organisation is the core of digital transformation (DT). Ninety percent of corporate leaders anticipate that ICT and digital technologies will play a more strategic role in the next ten years, indicating the growing significance of digital transformation in management planning (Svahn et al., 2017). By integrating linked and intelligent aspects with people and business, an organisation can go from an e-business model—a business model made possible by IT and online transaction processing—to a digital business model. People, businesses, internet-enabled objects (IoT), data that helps companies make choices, and cloud computing for infrastructure comprise the essential digital components.

The Digital Transformation (DT) framework delineates four fundamental dimensions of any digital transformation endeavour. These dimensions are as follows: (a) utilising digital technologies; (b) altering value creation; (c) modifying organisational structures, processes, and skill sets to optimise the utilisation of new technologies; and (d) financing DT endeavours through core business (Tortora et al., 2021). The organisation can implement DT thanks to the digital transformation plan, which also helps administrators with the transformation process. Compared to a digital business plan, DT strategy has a wider impact on an organisation.

If done right, DT allows an organisation to take the power balance away from suppliers and consumers and provide it to itself. An organisation can develop a first-mover advantage in providing data-driven value proposition by collecting more product and customer data with the help of technologies like the Internet of Things (Endres et al., 2022). IoT can improve value chain operations including marketing, after-sale support, and designing new products or services. Data enabled by IoT can be gathered and utilised to enhance goods and services (Urbinati et al., 2020). Across the value chain, new dynamic capabilities like data analytics, agile project management, integrating teams with varied work styles, etc. are warranted by the new technologies.

Companies require executives with the capacity to refocus their efforts in order to address difficulties related to complicated and copious amounts of data, as well as the experience and understanding necessary to work with enormous volumes of data, or "Big Data." Three key features of big data are volume, velocity, and variety, which empower managers to make decisions based on facts rather than gut feeling (MAZZA, 2015). Four different industry participant types are present on digital platforms, facilitating value-creating interactions. These actors include producers who develop their offerings, owners who oversee their intellectual property and governance, providers who act as the platforms' user interface, and users who access the offerings made by providers.

III. DIGITAL TRANSFORMATION ON ORGANIZATIONB CULTURES

Mostly in affluent economies, DT research has been conducted. In rising economies like India, these preexisting conclusions from industrialised economies could not hold true. The lack of particular intermediaries, regulating institutions, and contract-enforcing tools and mechanisms results in structural and system level ambiguities or vacuums in emerging markets (Herrera González & Hidalgo Nuchera, 2019). These components present a range of risks and difficulties for companies that are honing their digital technology-based business models. These components could lead to particular conclusions about why companies use DT in developing nations. On the other hand, broad conclusions from the second and third empirical research apply to all settings and businesses that have used DT. The research context for this study of DT-engaged enterprises in India consists of the following components.

DT-adopting businesses of all sizes are included in the study. Because they are more nimble and have been around for a shorter period of time than larger companies, smaller businesses may require a distinct set of managerial tasks than medium-sized and large businesses. Furthermore, by selecting a sample that encompasses all sizes, the selectivity bias is eliminated, allowing the findings to be applied to a wide range of firm sizes. Leaders and founders of fourteen companies that have recently adopted DT have contributed to the study. These fourteen businesses are spread around the southern Indian cities of Bengaluru, Trivandrum, Chennai, and Cochin. The interviewees are senior managers who actively participate in making decisions on process modifications, appropriate strategy adoption, new value proposition development, and internal resource allocation inside the company (Steiber et al., 2021).

1110 minutes of taped interviews with the target samples for the first and second empirical research are included in the data. There are 117,000 words archived in the transcripts of these interviews. The third study on creating new value with DT involves 150 minutes of recorded talks and an archived transcript of about 17,000 words. Informal conversations with team members, a review of internal corporate documentation and process documents, a demonstration of the portals and applications being utilised, and websites are all included in the discussions. After processing 21 hours of recorded interviews, all of the interview conversations result in transcripts of 134000 words that are archived.

The goal of the exploratory first and second investigations is to develop a theoretical framework or discoveries about the antecedents of direct observation (DT) and the managerial behaviours associated with DT. Gioia et al. (2013) developed the idea of "inductive thematic

analysis," which we used in this study to iteratively combine theories and data in order to develop a conceptual framework. Research methodology section provides details on Gioia's approach and how this study is conducted. The third empirical research has been carried out as explorative research; however, the emphasis is on arriving at a conceptual framework that enables firms to build novel value 6 creation using data (Kohli & Melville, 2019). In other words, this study presents recommendations for firms on the usage of data and strategy around data processing. The third study collates all ideas into a conceptual framework and presents the same as recommendation (Nambisan et al., 2017).

3.1. Research Design

The methodology used in this study is qualitative analysis. An exploratory technique is preferable to a qualitative strategy when attempting to comprehend the underlying phenomenon associated with a certain study topic, in this case, "Digital Transformation." A qualitative approach is suitable for responding to questions about "what," "why," and "how." The reorganisation of enterprises undergoing DT and the drivers of DT in emerging markets are relatively recent phenomena, with a lack of maturity in the literature and notions that are still unclear and flexible. When the data presented is ambiguous, it is difficult to quantify the data in meaningful ways (Di Vaio et al., 2021). For this reason, qualitative analysis is a better option. Classifying data, "unitising the data," identifying correlations and creating categories, and creating and testing hypotheses are all part of qualitative analysis. Not every study will contain every one of these components. There are three ways to approach qualitative analysis: deductively, interpretively, or by inductive or interpretative reasoning in figure 3.

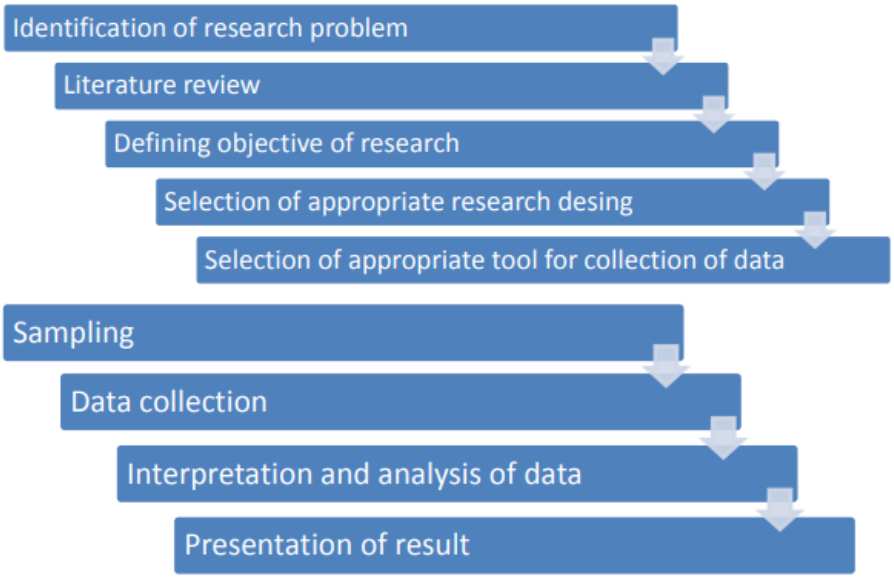

Figure 3: Research Design

The application of theoretically grounded qualitative analytic techniques is insufficient, and the theoretical underpinnings of design theory are still in their infancy and lack full validation. Therefore, the purpose of this study is to employ inductive analysis to support the theoretical conclusions of DT.

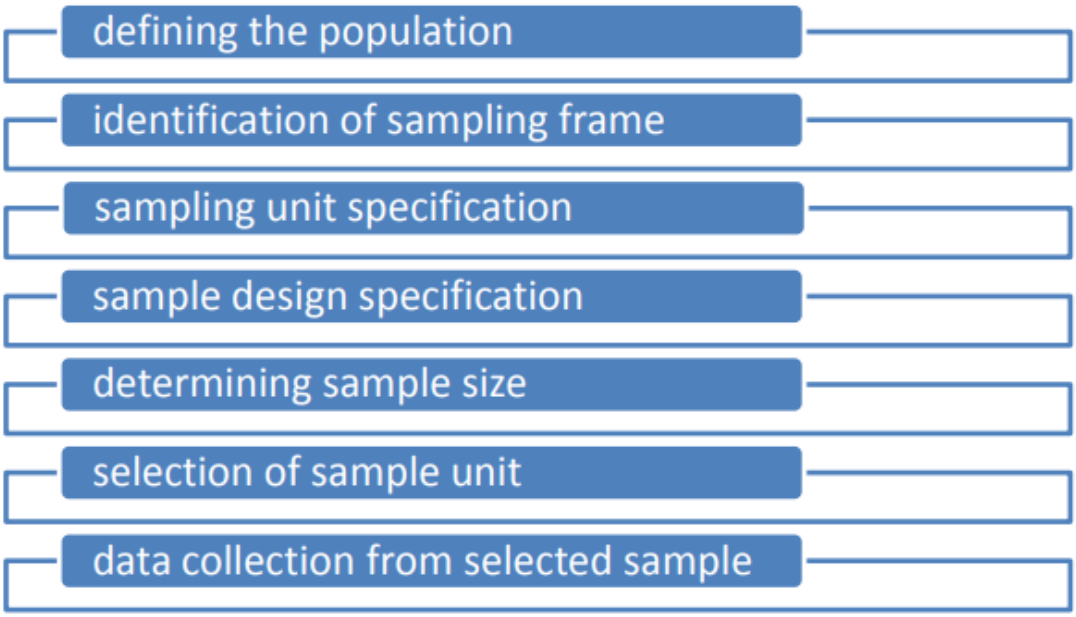

Figure 4: Sampling Procedure

A straightforward technique for selecting a subset of survey participants from the entire population is the sampling procedure (figure 4). Sampling technique refers to the process used to choose the designated respondents who are representative of the entire community.

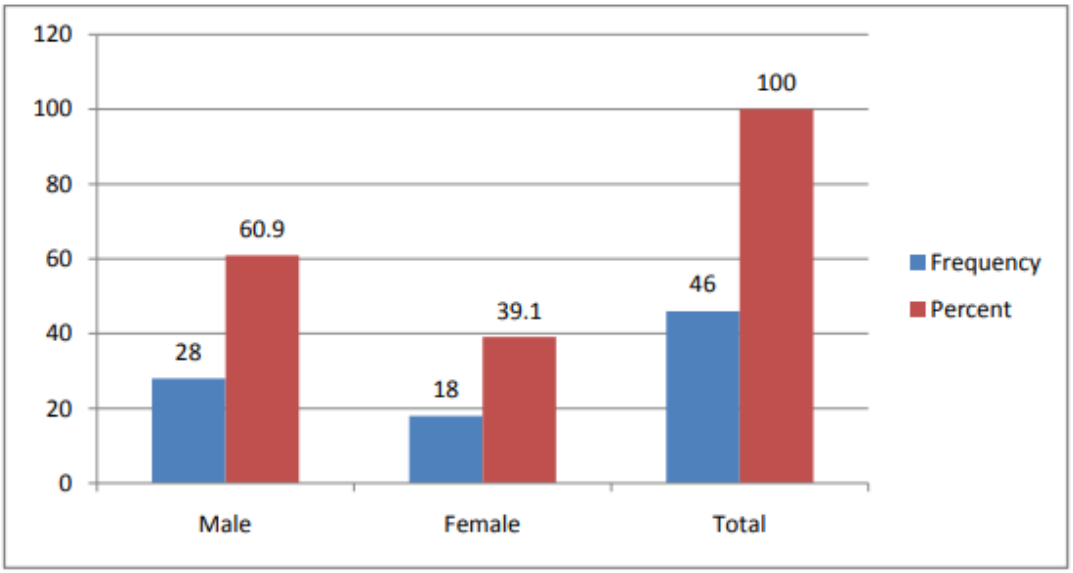

Figure 5: Graph Showing Gender Wise Frequency

Figure 5 shows that of the 46 respondents, 18 (60.9%) were female and the remaining 28 (60.9%) were male. It illustrates how men predominate in the IT sector and how female administrators are inferior to their male counterparts. It suggests that there are more male employees than female employees at higher levels in the IT industries. 1.41 and.541 are the mean and standard deviation, respectively. Both men and women are employed in the IT sector, with a greater proportion of men than women.

Figure 6 shows the age distribution of respondents into various classes along with the frequency, percentage, and cumulative percentage of mentions for each class. The data's diagrammatic representation is visible.

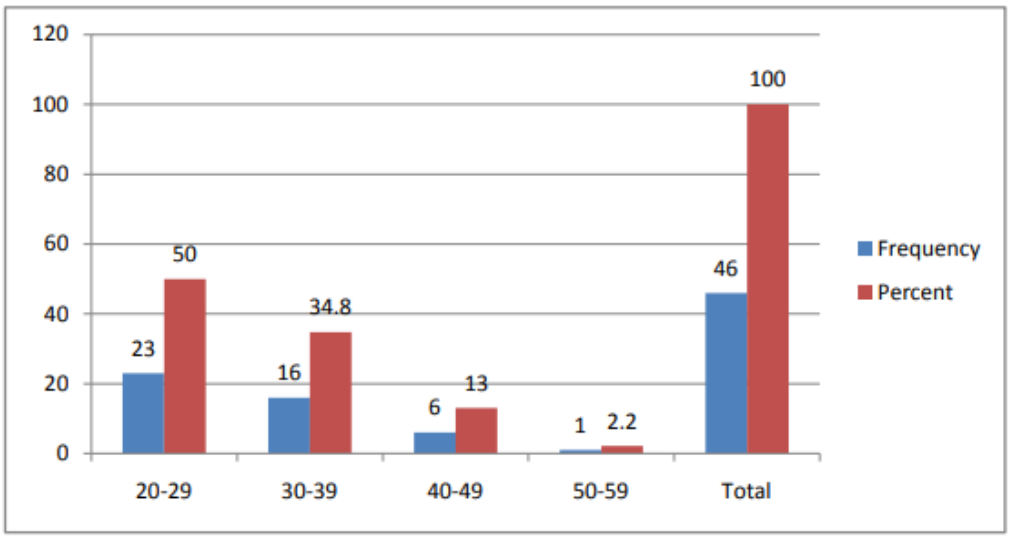

Figure 6: Presentation of Age Group Data of Respondents

Figure 7 shows the age distribution of respondents into various classes along with the frequency, percentage, and cumulative percentage of mentions for each class. The data's diagrammatic representation is visible.

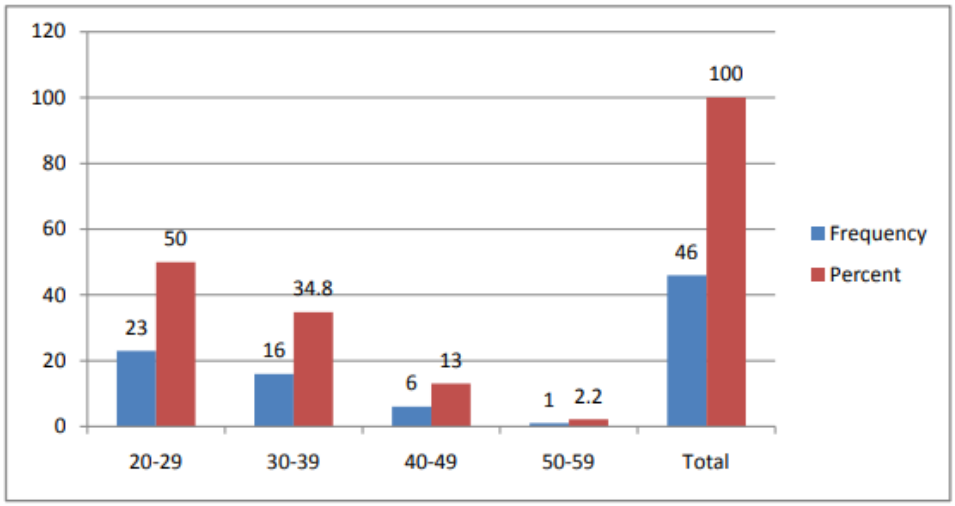

Figure 7: Presentation of Age Group Data of Respondents

Figure 7 shows that, out of 46 respondents, the greatest number belonged to the age group of 20–29 years old (count: 23/50%), followed by 16 respondents (34.8%) who belonged to the 30-39 age group, 6 respondents (13%) who belonged to the 40–49 age group, and 1 respondent (2.2%) who belonged to the 50–59 age group. The findings indicate that the majority of workers in the IT sector were younger and intermediate workers, aged between 20 and 40, with relatively few elderly workers.

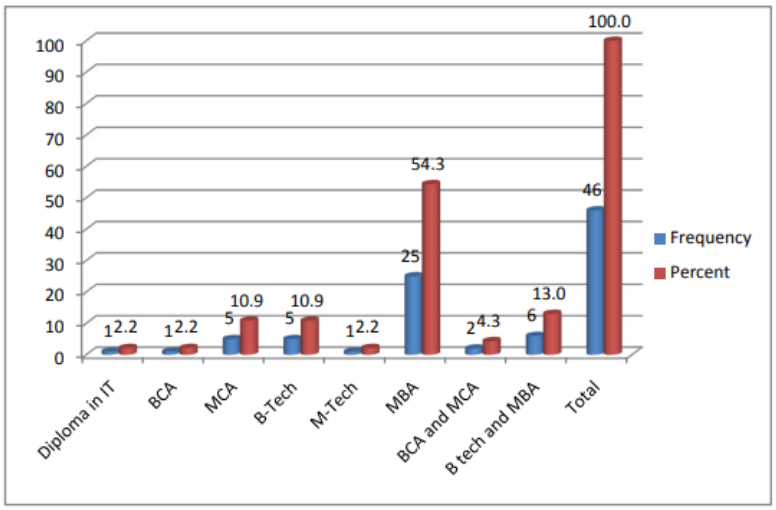

Figure 8: Technical Educational Qualification of Respondents

The respondents' backgrounds in technical education have been used to categorise them. The data are shown in Figure 8-10 along with their frequencies.

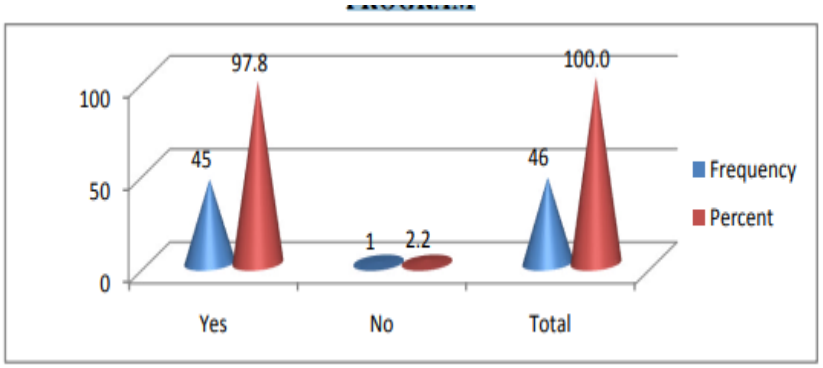

Figure 9: Diagrammatic Presentation for Usefulness of Training Program

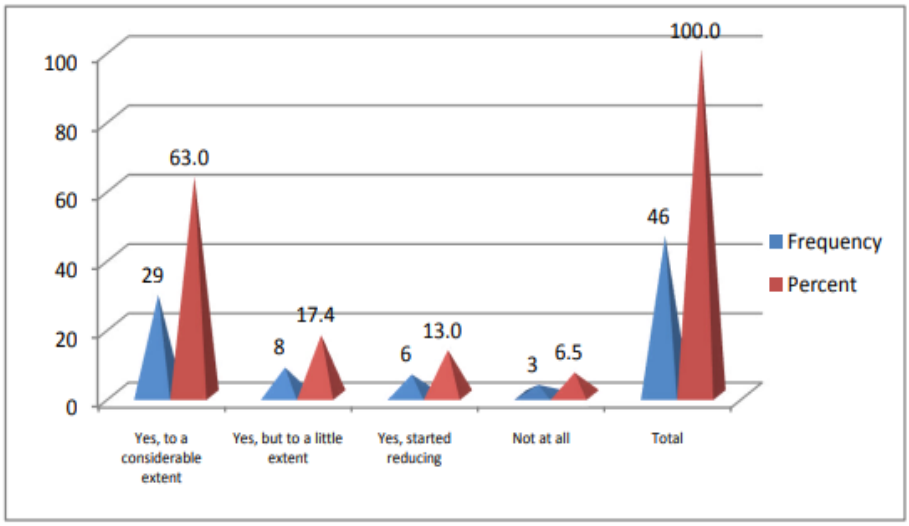

Figure 10: Graph Shows the Reduction in Attrition Rate of Employee

Businesses and researchers are tempted to utilise metric thinking while considering digital trace data because of its abundance. This brings up the topic of digital metrics, which are standardised measuring schemes derived from digital trace data. Metrics, according to analytics literature, will enhance innovation outcomes.

IV. CONCLUSION

Along with addressing economic issues, digital changes will address social issues that impact consumers and enterprises. This study investigates the use of digital innovation within the framework of online communities. It is founded on empirical research conducted in the context of businesses dealing with highly data-rich internet communities. When taken as a whole, these studies highlight the potential worth of digital trace data produced by online communities for digital innovation and offer viable tactics for managing it effectively to create value. The work adds to discussions on the use of digital trace data that are orientated both theoretically and experimentally. It accomplishes this, in particular, by offering suggestions for handling digital trace data through community sociality, platform design, and narrative for digital innovation.

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