The Role of Digital Ecosystems in Digital Transformation: A Study of How Firms Collaborate and Complete

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Abstract

Since the introduction of the "Global Village" concept and increased ICT usage across industries, businesses and organisations have operated in a highly competitive, international marketplace. The pervasive integration of digital technology has expedited and enabled both incremental and disruptive innovation across various sectors. It is time for organisations to reconsider how work is done in light of recent digital developments. Process reengineering now has more breadth and power because to digital technologies. A few decades ago, process reengineering was frequently used interchangeably with innovation. It used to be more efficient, automated, and had bottlenecks removed from procedures. However, that was before many of the most recent technological advancements became available, which allow you to truly reimagine and rethink the processes in ways that were before impossible. There are many chances to reconsider how work is done and how processes are constructed thanks to digital intervention, which is remarkable and disruptive. With the advent of digital technology, reengineering's foundation and reasoning have evolved. It's no longer enough to just automate, simplify, and remove. It's just redesigning from scratch: make it intelligent, share resources, automate as needed, and activate all those features instantly.

Keywords: Digital Transformation, Digital Risk, Business Management.

I. INTRODUCTION

Regardless of the field or industry in which an enterprise operates, technology has been driving business operations and assisting in their sustainable growth for millennia, and more especially in the previous 80–90 years. Technology is a key component in the implementation of innovative products and solutions, as well as the further implementation of corporate plans and continual growth (Song et al., 2022). Furthermore, in the past 30 years, innovation has advanced tremendously as a result of the development of information and communication technology, with the majority of innovation occurring across industries being driven by digital technology. Thus, the governments, businesses, and organisations have all felt the impact and significance of the ICT sector. Globally, innovation has been the primary force behind changes in the economy, industry, and society. It offered solutions that were accessible, inexpensive, and could be used to meet the constantly evolving demands of users and citizens. The introduction of ICT and its

widespread application in business and industry have further accelerated innovation and helped to alter organisations (Kraus et al., 2021). Digital technologies, particularly cloud, IoT, AI, and machine learning, have created enormous opportunities for innovation and transformation of parts or all of the business processes, supporting systems, and underlying infrastructure that make up an enterprise's operations stack. Through the use of innovation energies in core transformation opportunities, organisations assist clients in creating a new digital core that is durable, scalable, flexible, and future-proof. This further supports the idea that a key component of businesses' ability to grow sustainably is their ability to strategically plan, think strategically, and strategically direct their use of technology (Marinelli et al., 2024). Previous studies have extensively examined the long-term effects of strategic planning, strategic thinking, and strategic orientation on an enterprise's sustainability competitive advantage (Abbate et al., 2022). Good market knowledge, focus, and orientation, for instance, are necessary for an organisation to perform well in the market (Aksoy, 2023). This is because such an organisation will be able to better understand the needs, pains, and potential of its customers than its rivals will, and will therefore be able to demonstrate greater competitiveness and strategies to take advantage of this. A plethora of global industry examples attest unequivocally to the significance that creative solutions play in boosting social and economic development and raising living standards. The gross domestic product (GDP) of developing countries like India has increased significantly in recent decades. Since the 1980s, these countries have also significantly increased their economic growth. They have done this by persistently encouraging the inward transfer of cutting-edge technology and by strengthening their domestic ability to absorb and improve through reverse engineering of goods and services and foreign licensing, which is followed by increased and mandatory investments in R&D (Riasanow et al., 2018).

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. DIGITAL INNOVATION

The use of new technologies or procedures to meet consumer needs and maintain an organization's competitive edge is known as process innovation. Taking a process approach necessitates a dedication to improving processes. Process innovation occurs when a company finds a solution to an issue that already exists (Chang & West, 2006). An established business process is carried out by innovators in a completely new method that produces something very advantageous and profitable for those who carry it out, for those who depend on it, or for both. Process innovation might include, for instance, adding a whole new sequence to an assembly line, which speeds up production by 100% and saves the company money and time. As part of their ongoing efforts to innovate their processes, organisations nowadays frequently implement new information technology systems or discover innovative methods to utilise older ones. Therefore, process innovation entails making substantial adjustments to tools, techniques, methodology, equipment, and/or software in order to adopt a new or significantly enhanced mode of production or service delivery (Palmié et al., 2022). However, tiny adjustments or enhancements, a rise in production or service capacities by the addition of production or logistical systems that closely resemble those already in place, are not regarded as innovations. Likewise, modifications

such as stopping a process, customising, trading new or greatly enhanced products, normal seasonal and other cyclical adjustments, simple capital replacement or extension, and changes brought about only by changes in factor prices are not regarded as innovations. Process innovation and incremental innovation differ greatly in terms of their size, scope, and effects on the entire organisation. Radical changes brought about by process innovation can raise a product's value by up to 50%, 100%, or even more (Cennamo et al., 2020). On the other hand, constant or incremental advancements produce little value. Process innovation, according to some scholars, is the process of developing revolutionary or game-changing goods and services. Process innovation typically necessitates more time for preparation and support from upper management, in addition to the adoption of a whole new strategy or technology. Compared to gradual advances, radical improvement is riskier and calls for a greater degree of cultural transformation. More often than not, process innovation has a greater and wider impact on an organization's ecosystem than do incremental changes. Do Market Leaders Lead in Business Process Innovation? is a research paper written by Professor Kristina McElheran of Harvard Business School. According to The Case(s) of E-Business Adoption, organisations that possess strong alignments and a favourable positioning may struggle to innovate if their business partners are unwilling to make substantial expenditures (Meena et al., 2024).

III. RESEARCH FRAMEWORK

It was determined to pursue descriptive research following the completion of exploratory research and the definition of a set of objectives. The purpose of choosing the descriptive study is to determine and be able to illustrate the properties of the relevant study-relevant variables. Research methodology (RM) tries to create mechanisms for data collecting and analysis, whereas research design offers the framework for research methodology. The research will be conducted on a particular Indian phone company (Bresciani et al., 2021). A model that developing IT companies in India can use to achieve sustainable growth will be developed based on the study's findings. Through a random sample design, a structured schedule questionnaire was given to respondents/employees from a limited group of IT organisations that were involved in projects/departments within the education and e-governance sectors. These responders came from these companies and were chosen at random. The method of easy random sampling was used to select responders. Because the intended sample size for this survey is small—320 respondents—convenient random sampling is employed. Convenient random sampling is used because, to put it simply, a random sample is a subset of people chosen at random by researchers to represent a larger population (Tan et al., 2020). Obtaining a representative sample of the general population is the aim. Since the respondents in this instance were understudy employees of the company, we sent a digital questionnaire to ensure random sampling even though we were unsure of their position within the company. According to data science, easy random sampling yields the best results when the population size is small or when the size and quantity of individual samples are relatively small because each candidate has an equal probability of being selected (Mızrak, 2023). We distributed a questionnaire to 600 employees, each of four, since the required sample size in this instance was 320. The study's IT businesses as well as a few others. Once more, the questionnaire was created digitally using Google Forms, and it was distributed to friends and acquaintances via email and social media groups with the request that they

forward it to their friends and coworkers. Additionally, we suggested that the questionnaire be forwarded to other people they know by sending it to all of the email addresses of company understudies that were included in my email directory, my guide's email directory, and the email directories of my other acquaintances. This was done to make sure that the sample technique is as random as possible and that all employees of the organisations who are the subject of the study are contacted, regardless of their department, function, experience, or industry vertical. We received about 400 responses through this, 315 of which were valid and comprehensive. The respondents/employees from IT organisations offering digital services in the government and education sectors across a range of positions and experience were the sampling units (Tawaststjerna, 2020). Illustration of Framework shown in Figure 1.

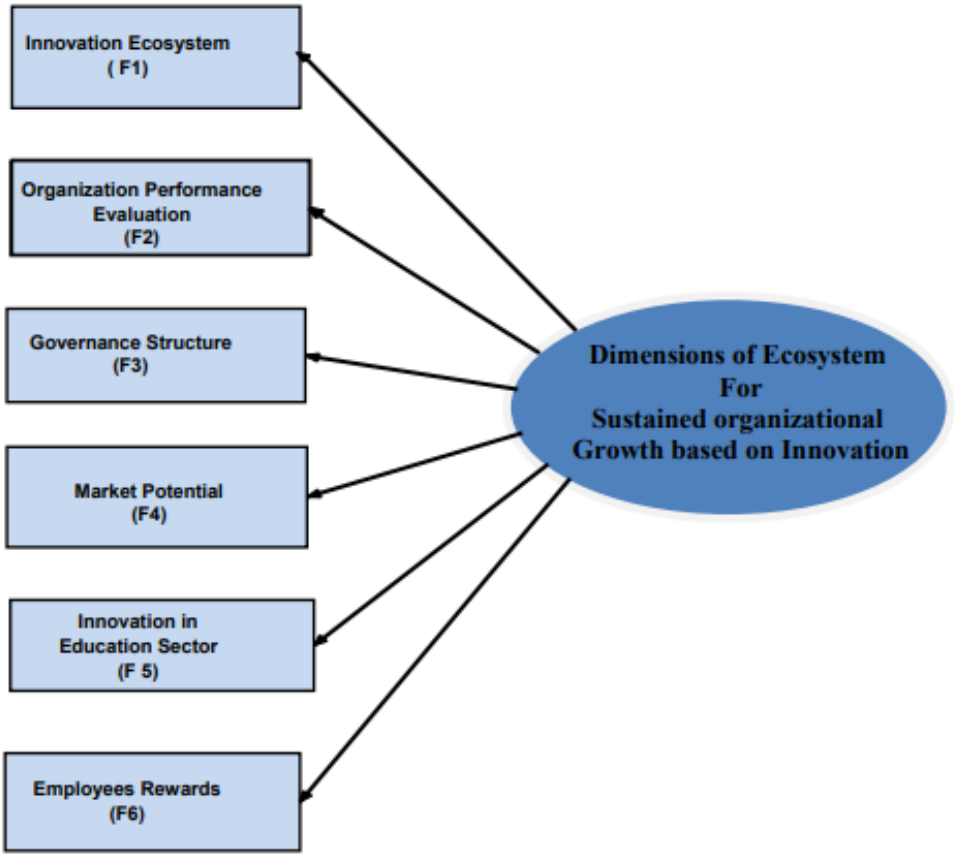


Figure 1: Illustration of Framework

The fundamental criteria for evaluating the correctness of quantitative research are data validity and reliability. The methods and sources used for gathering data are crucial components of every research project that calls for doing analysis and investigation. Additionally, it's important to make sure the actions taken are suitable and effective (Maijanen, 2022).

Table 1: Scale Reliability Statistics for the different Aspects of Business

Reliability Statistics	
Cronbach's Alpha	N of Items
0.986	9

The reliability statistics of the items pertaining to business factors that are impacted by technological advancement are displayed in Table 1 above. Given that the Cronbach's alpha value of.986, which is significantly higher than 0.7, indicates that there is internal consistency among the items.

Table 2: Scale Reliability Statistics for the Benefits

Reliability Statistics	
Cronbach's Alpha	N of Items
0.984	9

The reliability data for the companies' perceived gains from technical innovation are displayed in Table 2 above. Given that the Cronbach's alpha score is.984, higher than 0.7, it may be concluded that there is internal consistency among the items.

Table 3: Scale Reliability Statistics for the Marketing Mix Variables

Reliability Statistics	
Cronbach's Alpha	N of Items
0.975	9

Table 3, which displays the dependability results and illustrates the relationship between technical innovation and all parts of the marketing mix (product, price, distribution (location), and promotion), demonstrates the internal consistency and reliability of each item included in the study instruments. Given that the relationship between technical innovation and the four components of the marketing mix—product, pricing, distribution (location), and promotion—has a measured value of.975, which is greater than 0.7.

IV. EXPERIMENTAL ANALYSIS

The distribution study of a single variable is the primary focus of descriptive analysis. It is obtained through the creation of specific tables using the unprocessed survey data (Cozzolino et al., 2021). Various descriptive methods have been applied to the unprocessed data obtained through the use of questionnaires. Using the analysis, the researcher has provided a thorough explanation of the data distribution and collection methods. The mean's central tendencies had been looked at. Calculations have also been made regarding the examination of dispersion indicators such as mean, standard deviation, range, minimum, and maximum (Rocha et al., 2021). To see how the company's employees feel about the questions posed in the questionnaire, various bar and pie charts have also been developed. The descriptive analysis's measured values are provided below:

The respondents' age group is displayed in Figure 2. Ages 18 to 25 accounted for 21% of answers, followed by 26 to 35 (62.1%), 36 to 50 (11.3%), and above 50 (5.6%) of the total.

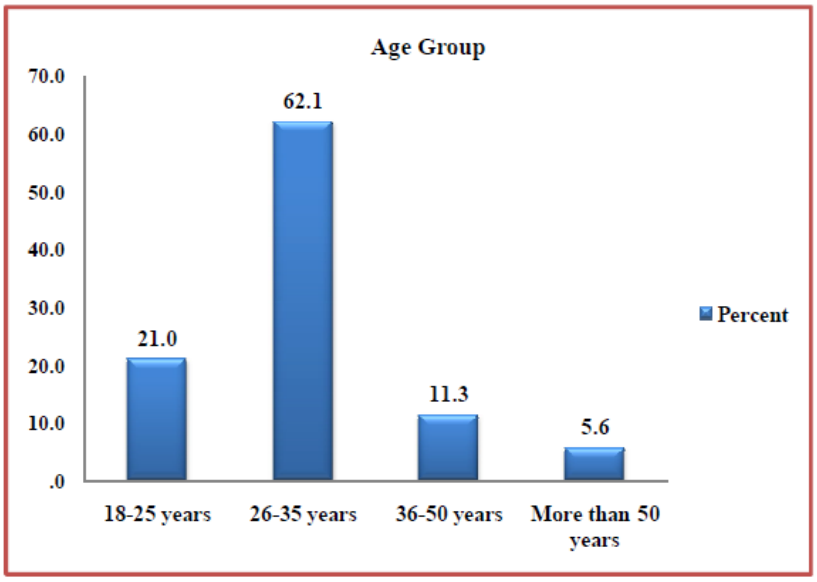


Figure 2: Distribution of Respondents by Age Group

The prevalence of respondents' educational qualifications is displayed in Figure 3. Graduates made up 52.8% of the respondents, postgraduates made up 27.2%, and professionals made up 20%.

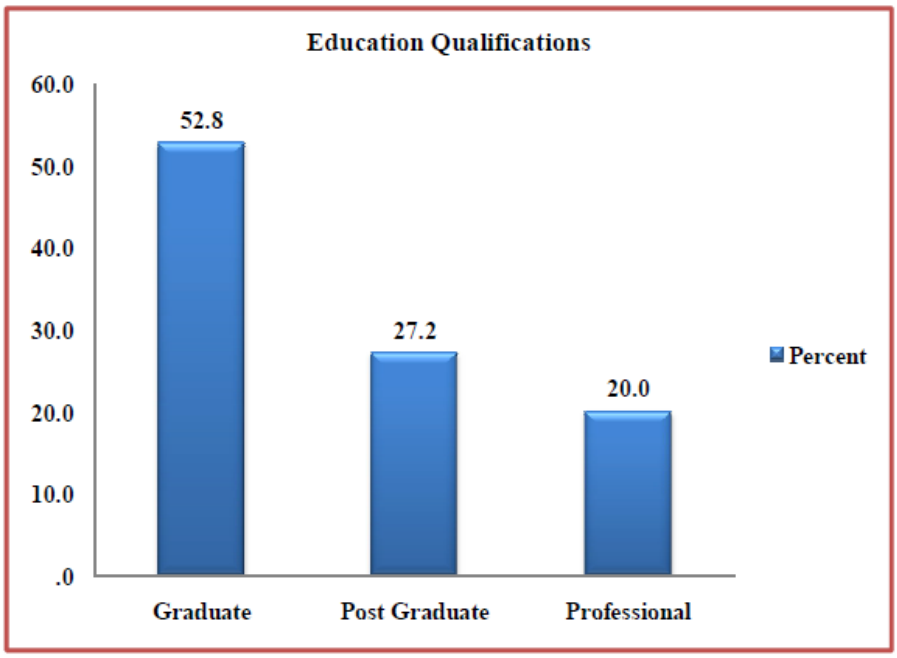


Figure 3: Classification of Respondents on the Basis of Educational Qualification

The educational profile of the respondents, which was categorised into three groups according to their degree of qualification, is shown in Figure 4. The majority of respondents, or 47.7%, hold a master's degree. Thirty-seven percent of the participants have a bachelor's degree, while the remaining fifteen percent have degrees other than master's and bachelor's.

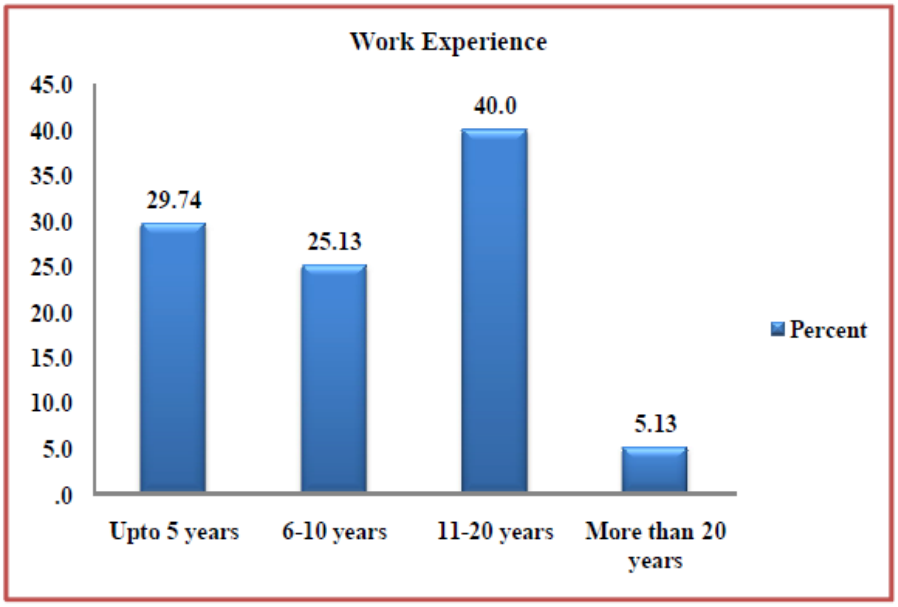


Figure 4: Distribution of Respondents by Work Experience

Figure 5 shows the respondents' job experience. Of the respondents, 29.74% had worked for a company for up to five years, 25.13 percent for six to ten years, 40% for eleven to twenty years, and 5.13 percent for more than twenty years.

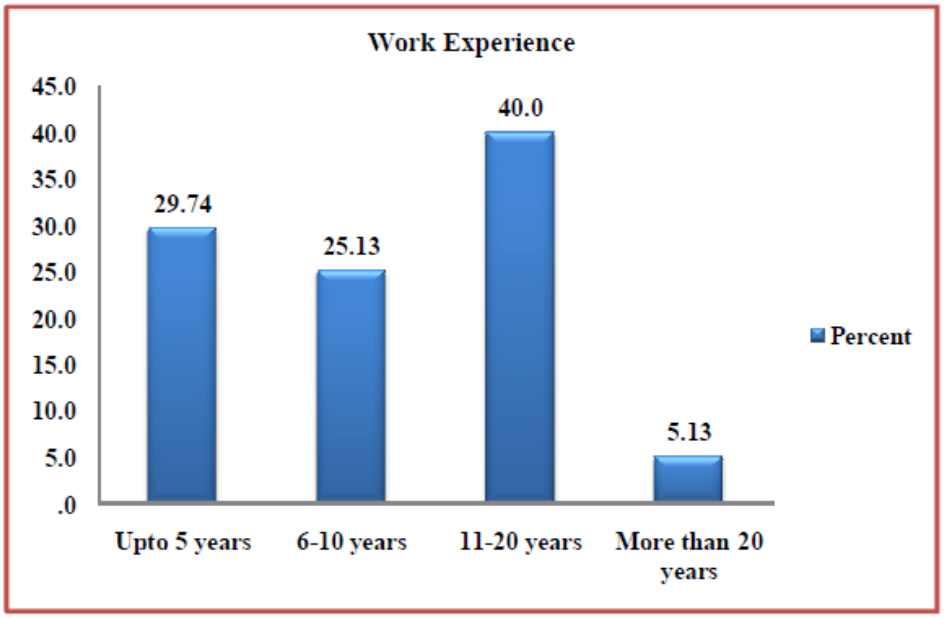


Figure 5: Classification of Respondents on the Basis of Geographic Location

It has been noted that 94.9% of respondents had favourable opinions regarding how technology innovation affected business, while just 5.1% had unfavourable opinions regarding how technological innovation affected the mobile phone industry. It indicates that the majority of respondents believe technology advancement is transforming the sector.



Figure 6: Impact of Technological Innovation on Mobile Phone Industry

The five groups into which the monthly family income of the respondents was split are shown in Figure 6. Just 5.5% of all respondents earn up to ₹15,000 per month as a family. The family income of the remaining 54.3% is more than ₹45,000. Respondents Awareness of Innovation shown in Figure 7.

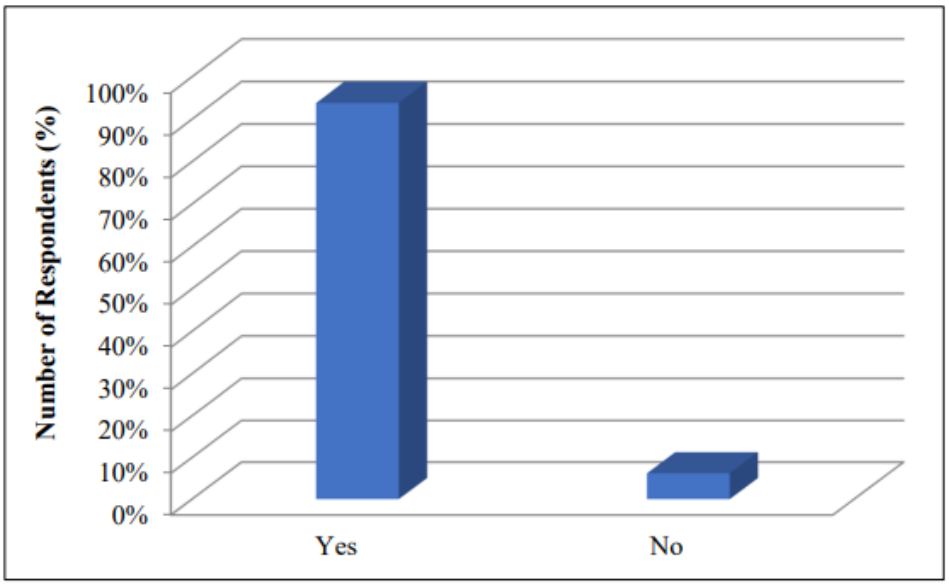


Figure 7: Respondents Awareness of Innovation

Many businesses are creating, developing, and putting into practice innovative digital business models in response to the opportunities and challenges presented by digital transformation. The possibility of (digital) business model innovations is really impacted by the unstable and unpredictable "digital" backdrop, especially if businesses view disruption and digital transformation as dangers rather than possibilities. Impact of Technological Innovation on Mobile Phone Industry shown in Figure 8.

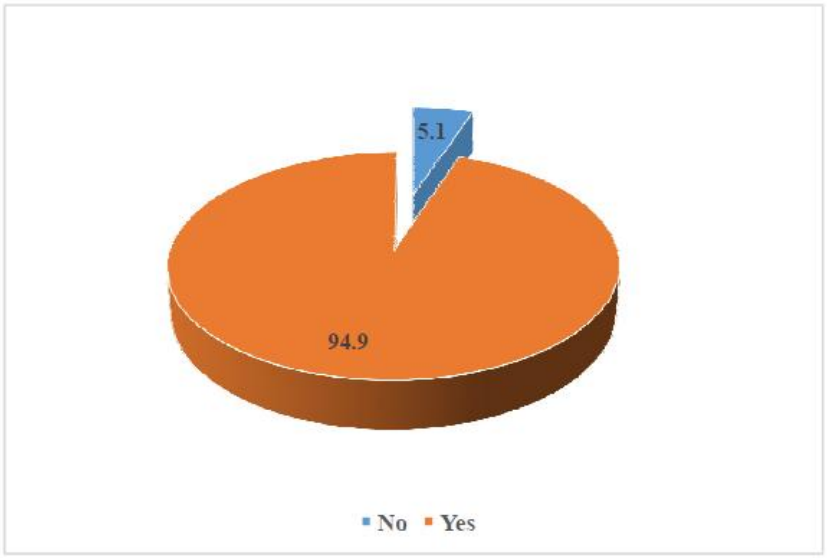


Figure 8: Impact of Technological Innovation on Mobile Phone Industry

According to respondents' perceptions of how companies use technological innovation, 14.9% think it helps them perform better on their products, 10.3% think it helps them compete, 10.3% think it helps them draw in more customers, 20% think it helps them make more money, and the majority 44.6% of respondents believe that their organisation uses technological innovation to accomplish all of the goals that were outlined. Company Objective to Engage in Technological Innovation shown in Figure 9.

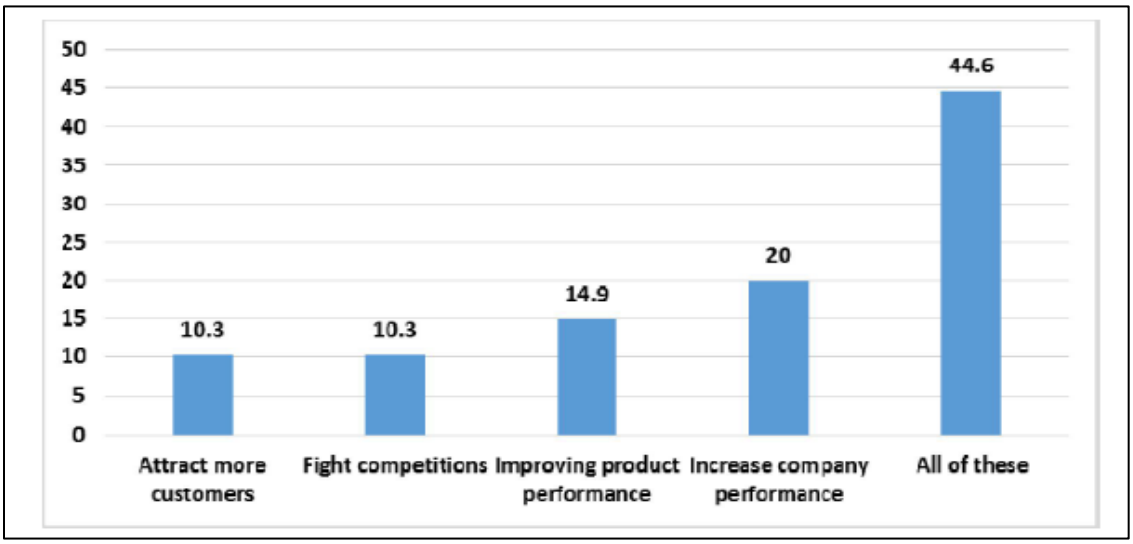


Figure 9: Company Objective to Engage in Technological Innovation

In terms of how businesses use technological innovation, respondents believe that: 14.9% believe it improves the performance of their products; 10.3% believe it helps them compete; 10.3% believe it helps them attract more customers; 20% believe it helps them increase revenue; and most 44.6% of respondents think their company employs technological innovation to achieve all of the above objectives. Achievement of Marketing Goals through Technological Innovation shown in Figure 10.

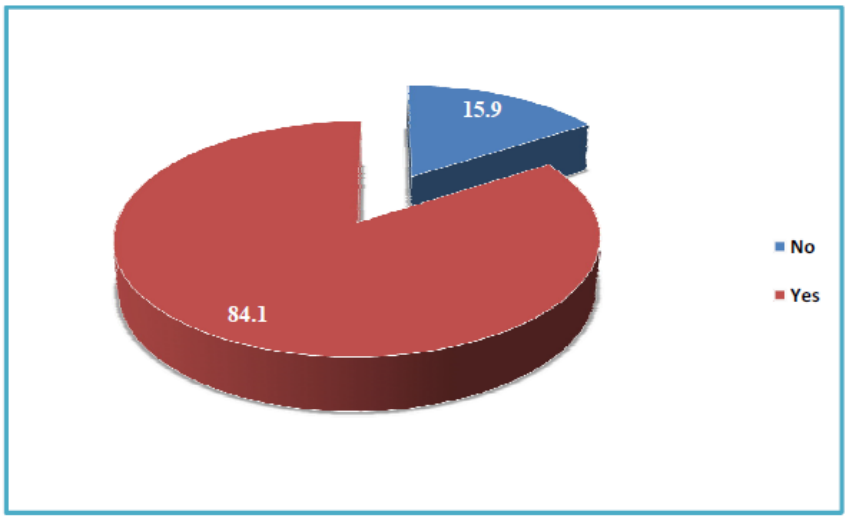


Figure 10: Achievement of Marketing Goals through Technological Innovation

It was found that while 15.9% of respondents disagreed, 84.1% of respondents thought technological innovation helped marketers accomplish their objectives. It implies that innovation helps businesses achieve their marketing goals and satisfies the needs of organisations for growth and development. Using the information gathered from the businesses and retailers for whom the researcher had formulated merely hypotheses, the researcher performed statistical analyses (Subramaniam et al., 2019). The interpretation's findings show that, in the mobile phone sector, technical innovation directly and significantly influences product innovation, price and distribution strategies, product promotion, and sales. Their answers served solely to corroborate the findings of surveys conducted by companies and retailers (Furr et al., 2022; Appio et al., 2021).

V. CONCLUSION

According to the study's findings, sustainability results from the development of a robust innovation ecosystem that is aligned and cooperating to reach a shared goal. The framework that follows offers suggestions for creating an ecosystem of long-term organisational growth based on innovation, based on the research findings as well as an industry review of particular IT businesses that are the subject of the study. This study focused more on investigating, identifying, testing, and proposing an ecosystem model for long-term, innovation-driven organisational growth. Numerous dimensions and elements have been identified by research, and it has been determined that they directly affect sustainability. It has been noted through extensive industry and literary reviews that the majority of innovation occurring in all fields and industries is driven by digital technology. The introduction of digital, ICT, and software technologies has led to the development of new products, enhanced business procedures, and new business ventures. The abrupt upsurge and deluge of UNICORNS into every economic sector—all of which are digitally driven—has had a significant influence on society and people in general. In the future, research must be done only to determine the function of digital, ICT, and software technologies in society and business, and how such functions affect the sustainability of those sectors, as well as the environment and humankind.

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