# THE EFFECT OF INNOVATION MANAGEMENT ON SUSTAINABLE COMPETITIVE ADVANTAGE IN CONTEMPORARY ORGANIZATIONS

#### Dr. Seema Bhakuni

Assistant Professor, Doon Group of Institutions Email:seemagrawal1978@gmail.com.

#### ABSTRACT

This research evaluated innovative competitive advantage, product excellence, or technological acceptance as the fundamental dynamic capacities of manufacturing SMEs. The research was backed by the dynamic characteristics concept of the company. This study's objective was to evaluate the influence that two aspects of innovative competitive advantage, namely consumer choice and innovative business architecture, have on item excellence for the aim of achieving sustainable development between small and medium-sized businesses (SMEs). In addition to this, it investigated how the deployment of technologies might act as a moderating factor in the connection between innovative economic strength as well as product excellence. According to the findings, the preferences of customers do not immediately influence the quality of the products themselves; rather, the deployment of new technologies moderates the link between consumer preferences & product excellence. It was discovered that the strategic business model had a considerable & favorable impact on item excellence, indicating that the incorporation of new technologies facilitated the connection between these two factors. According to the findings of this study, the supervisors of manufacturing SMEs should take note of the actuality that increasing product quality thru into the implementation of innovative marketable additional benefit techniques & technological advancement is beneficial to the SMEs' ability to expand sustainably.

#### Keywords — Market, Consumer, Innovation, Technology, Sustainable, Organization, SME

# AN INTRODUCTION

Even national innovation systems or local producers are having trouble keeping up with the everevolving requirements of the worldwide competitive market. As a result of the move in the industry away from manufacturing or toward either activity and as waves of sociotechnical growth influence the creative landscape, nations, districts, or towns across the globe are undergoing significant structural adjustments. It is necessary to establish and improve regional innovation ecosystems to successfully regulate the structural transformation & provide the most effective support for innovations as is feasible [1]. The purpose of this essay is to elicit conversation and provide novel points of view about innovation. In this essay, we argue that the resolution of difficult issues or the generation of sustained well-being is not only necessary for innovation but also serves as a potential element of a competitive benefit for innovative or information ecosystems [2]. The ever-shifting forces that motivate innovation give the kindling that is required for fresh laws & procedures to be implemented all over the globe to access previously untapped possibilities for development. Since creativity is often connected with issuesolving, the unique innovation difficulties of today are tied to terrible issues. Systematic errors are concerns in society and everyday life that are extremely complex, and multi-faceted, and that demand innovative remedies. The concept of sustainable development is an example of a typical sort of difficult issue. "development that satisfies the demands of the current without damaging the capacity of future generations to satisfy their needs," is how the Global Council on Environmental & Development describes sustainable development. Understanding & resolving difficult and pervasive issues may be facilitated by sustainable innovation, which incorporates and builds upon sustainable development, and organizational sustainability, including ecosystem, though. Sustainable innovations are being developed all over the globe in areas such as eco-innovation enterprise, architecture, peer-to-peer practices, policy-making, or improvements in sustainable behaviors; yet, the notion of sustainable innovation has to be systemically clarified. The purpose of this essay is to expound on the topic suitably.



Figure 1. Sem Model Of The Effect Of Innovation Management On Sustainable Competitive Advantage In Contemporary Organizations

# **OBJECTIVE**

The following are some of the goals that the study attempted to accomplish:

- To study innovation from the point of view of an environment
- Examine the framework of consumer preference, strategic business model, reliability of the product, and technology adaption.
- Study regarding SME consumer preferences & technologies adaptation for sustainable development
- To Study SME sustainable development involves a strategic business plan & technology adoption
- Examining SME sustainable development involves an organizational marketing strategy and excellent products.
- Study about the measurement model assessment

# AIM OF THE STUDY

The basic aim of the study is focused in :

• Understanding the role of Consumer Preferences & Technologies Adaptation For Sustainable Development

• Analysing the Sustainable Development Involves A Strategic Business Plan & Technology Adoption

• Adressing the Sustainable Development Involves A Organisational Marketing Strategy And Excellent Products.

# **RESEARCH QUESTIONS**

The following are the research questions of the study:

- Does the role of consumer preferences & technologies adaptation support in sustainable development of the organisation?
- Will the adoption of strategic business plan & technology adoption enable in sustainable development?

• Is the application of organisational marketing strategy support in sustainable development and creating excellent products.

# Innovation From The Point Of View Of An Environment

Innovation seems to concentrate on certain industries or regions that expand quicker and frequently need structural adjustments. Likewise, local growth is trending towards big clusters, towns, or metropolitan regions, with worldwide-level innovative centers hosting the majority of value creation, and R&D activity, including patent rights. Global value chains benefit greatly from creative centers in the worldwide economy. They are well and draw talent, businesses, or capital. They can reinvent themself in a shifting context. They contain dynamics in the invention ecosystems in which innovations develop when diverse entities interact [3].

Originally, we claimed that top-tier colleges and research institutes, enough finance and a local market, a trained labor force, specialization, collaboration between enterprises, & worldwide connectivity are all required for creativity. According to this viewpoint, there is a necessity to establish world-class creative clusters that integrate a great standard of life with outstanding commercial opportunities. This is accomplished via close collaboration between local, regional, or international players. Activities & assets must be concentrated towards local advantages & merged to form new sectors. In practice, though, only a few locations have shown this kind of rejuvenation potential [4].

A dynamic, active network that fosters invention is referred to as an "innovation ecosystem." In practice, it might relate to local hubs, networks, or technological platforms. Its origins may be found in industrial or business groups, the theoretical evolution of innovation, as well as the Triple Helix strategy to economic growth and state tech networks. Several studies have focused on regional or national environments & their evolution.

The ecosystems model highlights the importance of regional or public players in the development of the innovative activity. Because of the countless benefits affiliated with hub affiliation, including such connectivity to founded marketplace, brand recognition as well as corporate benefits, as well as connect directly to the academic estate as well as technological knowledge, the hub-based technology ecosystem led by a single company has emerged as the majority notable background for new company formation. An innovative ecosystem is a web of links that allows knowledge and skill to flow across systems of long-term value creation. The systematic methodology has been employed to define the complexities of innovation at different levels - national, regional, scientific, as well as sectoral - as well as the procedures by which study functionalities construct understanding and afterward transmit understanding to assist business growth in the sense of the Triple Helix of business, government, and academic communication. The ecosystem metaphor also adds value and culture to the systems approach. An ecosystem's transformation is defined by a continuous realigning of synergistic interactions between people, information, and assets for both incremental and transformative value co-creation. Value co-creation networks emerge from genuinely advantageous partnerships between individuals, businesses, and investment groups.



Figure 2. Conceptual Framework Of The Effect Of Innovation Management On Sustainable Competitive Advantage In Contemporary Organizations

# LITERATURE REVIEW

# I. Consumer Preference

Manufacturing SMEs, in particular, are commercial firms operating in an extremely aggressive, complicated, and rapidly shifting business environment based on client demands. As a result, SMEs are faced with the obligation of prioritizing consumer choice, which offers a substantial competitive edge for enterprises. Consumer preferences are defined as a consumer's expression of needs regarding item attributes or future product prospects; it is therefore an important element to examine while developing design ideas [5]. To demonstrate, notwithstanding the greater pleasure provided by shopping malls, retail streets are much more responsive to client desires. Conversely, household size or gender are socioeconomic characteristics that have the greatest influence on consumer desire. Because consumers sometimes purchase items at current prices before even putting them to use, a product's visual look is an additional crucial component that determines customer choice in regards to how consumers view an item's value [6].

#### II. Strategic Business Model

Organizations need to acquire the expertise to investigate, plan, or construct new business sectors to assure their continued competitiveness over a lengthy period. A business concept is a statement of an organization and how it runs to achieve its objectives, including revenue, development, and social implications [7]. This definition is made to achieve the aforementioned goals. It has been demonstrated to be an essential tool for bringing new concepts as well as innovations to the industry, so it acts as a driver of advancement to unlock technical possibilities. Strength is defined as the capacity of a business framework to remain feasible as well as feasible in an evolving business ecosystem. Strength is recognized as the capacity to unleash technical possibility [8]. In line with this idea, a strategic business model emphasizes that strategic thinking needs to be continually maintained in the formation and expansion of an organization's business operations. This is necessary to ensure that the company is successful. The major element of competitive advantage or leveraging that improves the sustainability effectiveness of firms, particularly SMEs, is the operational capacity to migrate into different economic patterns rapidly and profitably. As a result, the strategic business paradigm as an important component of innovative competitiveness edge has become significant in the field of study on the sustainability of businesses [9].





#### **III.** Reliability of Products

To guarantee that goods gain continual market focus from consumers, a production SME must prioritize product endurance. Quality is recognized as the primary and most important basis of a company's customer happiness, consumer devotion, or revenue. It was said that the user-based concept of quality includes aesthetically or actual excellence, whereas the product-based definition of quality is concerned with efficiency or functionality [10]. A manufacturing-based concept of excellence, which stresses procedures that result in a product and services that meet standards, was presented as an alternative. Exceptional quality enhances consumer choice & retention, resulting in item qualitative sustainability in SMEs. SMEs frequently perform an important function as innovators who influence consumers' opinions of goods excellence. As a result, they have been identified as the best players in terms of item excellence, marketing, or innovation [11]. Nevertheless, when they make items that are intrinsically identical to the products of other companies, their product offerings are not distinctive. To drive long-term development, SMEs must continue to dominate the competitive marketplace by focusing on product quality to please consumers.

#### IV. Technology Adoption

In reaction to the global trends that are now taking place all over the globe, organizations are presently going through significant changes, which require the creation of competencies that are electronic, intelligent, or virtualized. Without the accessibility of information and the willingness of people to use it, almost no SMEs could operate. Adaptability is recognized as the fundamental method for the electronic transition of an organization, which recognizes it as the fundamental method for the strategic regeneration of an organization's business model, cooperative method, as well as ultimately heritage [12]. The digital transition is the continuing procedure of just using fresh electronic innovations in everyday organizational life. This transition would not have been possible without the contribution of innovation, which has enabled services advances not only technically feasible but also commercially viable. For small and medium-sized businesses (SMEs) to achieve fundamental skills and to enhance their competitive advantages, technologically innovative capacities (TICs) are essential [13]. In point of fact, according to the findings of a study of Chinese high-technology businesses, price strategy, consumer focus, or creative advertising support higher item development efficiency in contexts with significant levels of dysfunctional rivalry.

#### SIGNIFICANCE OF THE STUDY

It would seem that the majority of innovations are aimed at industries or fields that are fast expanding and, as a result, need constant structural adjustments. The vast majority of value creation, research and development (R&D), and intellectual rights are hosted by global-level innovative hubs, although local growth is moving toward big clusters, towns, or metropolitan regions. It is impossible to exaggerate the significance of cultural hubs to the formation of global value networks. They are effective at enticing people or businesses with coveted skill sets or financial resources. They are able to adapt to new circumstances and conditions as they arise. They encompass the dynamics of the ecosystems in which new innovations arise as a consequence of interactions between diverse players. These ecosystems provide the setting for the emergence of new inventions.

A dynamic and active network that fosters invention is referred to as a "innovation ecosystem." This network is named for its usage of the phrase "innovation ecosystem." It is possible that this refers to either physical or virtual nodes that are part of a bigger network. Its origins may be traced back to business and industry, as well as to the notion of innovation's progression, the Triple Helix strategy for encouraging economic growth, and government-sponsored research and development networks. Quite a few studies have been carried out with the purpose of tracing the evolution of various national or regional ecosystems.

Businesses need to arm themselves with the information necessary to investigate, develop, or establish new business sectors in order to assure their continued competitiveness over the long term. A description of a firm and the way it conducts its business in order to achieve its objectives, which may include monetary success, growth, and a beneficial influence on society is what is meant by the term "business concept." These goals will hopefully be met by the application of

this definition. It has been demonstrated to be a crucial resource in introducing novel ideas and innovations to the market, thereby acting as a catalyst for development and opening up new avenues of technological possibility. This is due to the fact that it has been shown to play an important role in introducing novel ideas and innovations to the market. The ability of a business framework to efficiently adjust to changing circumstances in the operating environment is a good indicator of how robust the framework is. It is generally accepted that power derives from the capacity to fully exploit available technical potential. In light of this, a strategic business model places an emphasis on the need of continuing to engage in strategic thinking throughout the process of establishing and expanding a company's commercial activity.

#### METHODOLOGY

This study examined manufacturing SMEs' creative competitive advantage, product perfection, and technology acceptability. Dynamic corporate characteristics supported the study. This research aimed to examine the effect of customer choice & creative business architecture on item excellence for small and medium-sized firms' sustainable growth (SMEs). It also examined how technology deployment may moderate the link between creative economic power and product quality. Emerging innovations mitigate the relationship between customer desires and product perfection, according to the study. The strategic business model had a positive influence on item excellence, demonstrating that new technology supported this relationship. Based on this research, manufacturing SME supervisors should notice that raising item excellence via new marketable extra benefit strategies & technical improvement is advantageous to the SMEs' potential to grow sustainably. The researchers intend to use a quantitative methodology; the primary objective of their investigation is to learn how small and medium-sized businesses (SMBs) can use creative competitive advantage in the form of customer choice and innovative business architecture to produce high-quality products while also minimising their impact on the environment (SMEs). In addition, the use of technology was investigated to see whether or not it may have a moderating function in the connection between creative economic power and product quality. The researchers acquire primary data by having survey participants complete a questionnaire that does not include any open-ended questions. In order to carry out the research project, the researcher has decided to use a sample size of 181. Secondary data are used while attempting to make head or tail of a previously conducted study in the same geographical location as the current investigation. The challenge of achieving sustainable development is illustrative of a typical kind of difficult issue. According to the definition offered by the Global Council on Environmental and Development, sustainable development is defined as "development that fulfils the demands of the present without compromising the capacity of future generations to meet their requirements." Nevertheless, sustainable innovation, which integrates and builds upon sustainable development and organisational sustainability, including ecosystem, may be able to assist in the knowledge of and contribution to the settlement of difficult and pervasive problems.

# FINDINGS

# A. SME Consumer Preferences & Technologies Adaptation For Sustainable Development

Inconsistencies in consumer choice tend to impact technological changes in a company, hence the link among customer choice & technological adoption has lately gained rigorous studies. A considerable relationship appears among customer-firm interaction (CFI) and several personal, business, and environmental characteristics, confirming the view that CFI is employed intentionally to strengthen market dominance in innovative or small enterprises. Similarly, prior researchers have emphasized the importance of consumer dynamics or consumer satisfaction while using breakthrough smart technology in a retail context. Furthermore, despite the development of internet financials, scientific research suggests that consumer banking consumers prefer face-to-face engagement. Understanding clients' cross-technology usage is also required, including their rotating preferences for engaging social networking sites, internet business information, or dependable chain-based payment systems [14]. The creation of innovative customer segments is a prerequisite for capitalizing on organizations' expanding technical capacities. Whereas numerous consumers use fundamental modern technologies (e.g., digital money transfers at the spot of buying), innovations that seem to be non-core or perhaps more tangential to the particular market (e.g., the program helped marketing) see highly variable stages of adaptation throughout consumer sections, including demographics, psychographics, as well as brand- or marketing-related desires. In respect of hotel service offerings, for example, consumer or hotel management demands were discovered to constitute a spectrum of network choices. Customers who are receptive to the application of linked household innovations, on the other hand, have been shown to take advantage of their capacity to outsource engagement with technologies, and because they are humanizing new tech, they want innovation to fit societal duties & standards.

v. SME Sustainable Development Involves A Strategic Business Plan & Technology Adoption The past study suggests several efforts to investigate the link between the planned business strategy and technological uptake. It was shown, in particular, that firms have traditionally been pushed to integrate information and communication technology (ICT) to ease the development of creative business models. However, just joining business-to-business e-commerce, which necessitates the implementation of new business strategies, is insufficient. There is a significant favorable association between devotion to technological needs and the performance of manufacturing SMEs throughout the plan execution phase. Similarly, technological policy decisions vary greatly between firms with diverse business goals, and the intensity of the association between corporate performance and particular technologies strategies is influenced by the business plan [15]. Whatever technological deployment must be considered within the framework of the particular company. Nonetheless, the previous study has failed to adequately highlight the link between strategic business models on technological uptake within manufacturing SMEs.

# **VI.** SME Sustainable Development Involves A Organisational Marketing Strategy And Excellent Products.

The client is at the heart of every company, and gauging consumer happiness is an essential component of any plan for improving corporate success; this makes the consumer experience a motivator of existence, profitability, and development. In small enterprises, market volatility substantially predicts organization paradigm shifts, while technical volatility does so for SMEs. Given the increased competitiveness in today's corporate climate, there is a growing tendency to introduce new items or enhance the value of existing goods to acquire additional customers. A research project looked at company models, company strategies, and creativity [16]. The core of

a business model, according to the expert, is its statement of how the firm gives value to consumers, tempts consumers to spend for worth, or translates those transactions into revenue. The amount of compatibility between strategic profile features and perfect profile qualities determines the strategy-business paradigm development synchronization. Small company owners' productivity grows as operational coherence improves, meeting utilitarian motives. Nevertheless, the researchers pointed out that platforms with more integration and community engagement in fulfilling hedonic motives enhance the productivity of all small enterprises [17].

#### DISCUSSION

#### Measurement Model Assessment

The measurement model was already evaluated to guarantee the legitimacy as well as the accuracy of the survey framework before performing PLS-SEM analysis. The divergent legitimacy, as well as dependability of the prototype, were assessed by examining the key component workloads, Cronbach's alpha (CA), Average Variance Obtained (AVO), but also Composite Reliability (CR). The measurement model is depicted in Table 2: The factor loadings are greater than 0.6, which is the recommended value. Whenever the outer variability inflation component (VIC) morals in research exceed 10, multicollinearity problems will arise. As a result, the current study's findings showed that all of the VIF values referenced were within the ideal range of 1.486 to 2.437, proving the absence of multicollinearity problems in this research [18].

Construc	Item	Loadin	CA	CR	AV
t		g			0
Strategic	SBM	0.83	0.7	0.84	0.63
Business	1		6	1	8
Model	SBM	0.80			
	2				
	SBM	0.76			
	3				
Reliabilit	RP 1	0.83	0.8	0.89	0.67
y of	RP 2	0.88	3	1	3
Product	RP 3	0.85	-		
Consum	CP 1	0.84	0.8	0.90	0.76
er	CP 2	0.87	4	8	7
Preferen	CP 3	0.90			
ce					
Technolo	TA 1	0.81	0.7	0.87	0.64
gy	TA 2	0.83	8	8	4
Adoptio	TA 3	0.78	-		
n					

#### Table 2. Illustrates The Measurement Model:

In Table 3: Validity of Discriminant Measures Using Heterotraits and Monotraits (HTMT)

CP SBM TA RP

Consumer	-			
Preferred				
SBM	0.645	-		
Technologies	0.666	0.710	-	
Adoption				
Reliability of	0.577	0.688	0.790	-
Product				

The discriminatory accuracy of the model was determined by calculating the heterotraitmonotrait (HTMT) correlation ratio, which should be less than 0.85. According to Table 3, the research concepts also satisfied the convergent reliability requirements.

# FINDINGS

Based on the analysis it is noted that the critical variables like SBM; Technologies Adoption and Reliability of Product possess effective relationship between them. The analysis further mentions that the factor loadings are greater than 0.6, which is the recommended value. Hence, the role of consumer preferences & technologies adaptation for sustainable development, furthermore, it can be stated that the sustainable development involves a strategic business plan & technology adoption, furthermore, the organisational marketing strategy and excellent products possess impact on sustainable development.

#### CONCLUSION

Technology natural systems are similar to organic ecosystems in that they are made up of specialized, diversified organizations that "feed off, assistance, as well as communicate with one another." They are embedded in far more contexts that include jurisdictions, governmental organizations, legislation, and regulations. This situation necessitates cross-functional collaboration among all collaborators as well as stockholders. Cooperation among businesses, academic institutions, enterprise corporatists as well as other financiers, municipalities, as well as residents is particularly essential. In conclusion, the consumer-preferred option only influences item performance when it is influenced by technological adoption, so even though strategic business models influence item skill directly as well as indirectly. This study uncovered that there are favorable connections between invention competitive edge and the quality of the product for SMEs' long-term expansion. As a result, it recognizes that technology competitor benefit is an outstanding tactic that supervisors of manufacturing SMEs can use to enhance item performance for long-term expansion.

# REFERENCE

1. S. D. Elgarhy and M. Abou-Shouk, "Effects of entrepreneurial orientation, marketing, and innovation capabilities, on market performance: The mediating effect of sustainable competitive advantage," International Journal of Contemporary Hospitality Management, 2022."Innovative Business Ecosystems," Strategic Direction, vol. 38, no. 2, pp. 4–5, 2022.

**2.** A. Pyka, "The bioeconomy from the point of view of Innovation Economics," Bioeconomy for Beginners, pp. 129–138, 2020.

**3.** "Innovation environment in emerging economies," Global Innovation in Emerging Economies, pp. 86–127, 2011.

**4.** S. Khan, "Factors affecting consumer buying behavior and consumer preference towards organized retail outlets in India," Journal of Advances and Scholarly Researches in Allied Education, vol. 15, no. 5, pp. 202–211, 2018.

**5.** "Consumer Preference Analysis of new complementary organic food products," Jurnal Teknologi Industri Pertanian, pp. 260–273, 2021.

6. "Strategic business model," Strategic Thinking, pp. 137–176, 2016.

**7.** R. Amit and C. Zott, "Business Model Innovation Strategy," Strategic Management, pp. 679–698, 2021.

8. D. Mann, "Strategic Business Model Development in ecosystems."

**9.** W. Dhewanto, S. Helena, F. Yunita, V. Nur Rizqi, and I. O. Williamson, "Quadruple helix approach to achieve international product quality for Indonesian Food SMEs," Journal of the Knowledge Economy, vol. 12, no. 2, pp. 452–469, 2020.

**10.** R. Sebastianelli and N. Tamimi, "How product quality dimensions relate to defining quality," International Journal of Quality & amp; Reliability Management, vol. 19, no. 4, pp. 442–453, 2002.

11. W. B. Rouse, "Technology adoption," Computing Possible Futures, pp. 73–90, 2019.

**12.** O. Ali and J. Soar, "Technology innovation adoption theories," Technology Adoption and Social Issues, pp. 821–860, 2018.

**13.** R. Moser and R. Raffaelli, "Consumer preferences for sustainable production methods in Apple Purchasing Behaviour: A non-hypothetical choice experiment," International Journal of Consumer Studies, vol. 36, no. 2, pp. 141–148, 2012.

**14.** R. Ahlström-Söderling, "SME Strategic Business Networks are seen as Learning Organizations," Journal of Small Business and Enterprise Development, vol. 10, no. 4, pp. 444–454, 2003.

**15.** A. Reshetkova, "Sustainable development in marketing strategy," Sustainability and sustainable development, pp. 83–95, 2021.

**16.** S. V, V. T, and R. S, "A conceptual study of marketing strategy and development of SME," Journal of Accounting & amp; Marketing, vol. 07, no. 03, 2018.

**17.** J. F. Hair, M. C. Howard, and C. Nitzl, "Assessing measurement model quality in PLS-SEM using confirmatory composite analysis," Journal of Business Research, vol. 109, pp. 101–110, 2020.

**18.** Manikandan, G., & Bhuvaneswari, G. (2022). KNOWLEDGE DISCOVERY IN DATA OF PROSTATE CANCER BY APPLYING ENSEMBLE LEARNING. Indian Journal of Computer Science and Engineering (IJCSE), e-ISSN : 0976-5166 p-ISSN : 2231-3850, Vol. 13 Issue. No. 3, PP. 907-916. https://doi.org/10.21817/indjcse/2022/v13i3/221303182.

 Bhuvaneswari, G., & Manikandan, G. (2022). A SMART SPEED GOVERNOR DEVICE FOR VEHICLE USING IOT. Webology ISSN: 1735-188X, Vol. 19, Issue No. 2. PP. 6544-6554.
 Bhuvaneswari, G., Manikandan, G. (2019), AN INTELLIGENT INTRUSION DETECTION SYSTEM FOR SECURE WIRELESS COMMUNICATION USING IPSO AND NEGATIVE SELECTION CLASSIFIER. Cluster Computing, E. ISSN:1573-7543, P.ISSN:1386-7857 Vol. 22, Issue No. 5, PP. 12429–12441. https://doi.org/10.1007/s10586-017-1643-4 **21.** G, Bhuvneswari and G, Manikandan, (2019) RECOGNITION OF ANCIENT STONE INSCRIPTION CHARACTERS USING HISTOGRAM OF ORIENTED GRADIENTS (August 5, 2019). Proceedings of International Conference on Recent Trends in Computing, Communication & Networking Technologies (ICRTCCNT). SSRN: https://ssrn.com/abstract=3432300 or http://dx.doi.org/10.2139/ssrn.3432300

**22.** Bhuvaneswari, G., Manikandan, G. (2018) A NOVEL MACHINE LEARNING FRAMEWORK FOR DIAGNOSING THE TYPE 2 DIABETICS USING TEMPORAL FUZZY ANT MINER DECISION TREE CLASSIFIER WITH TEMPORAL WEIGHTED GENETIC ALGORITHM. Computing. E ISSN: 1436-5057, P ISSN: 0010-485X Vol. 100, PP. 759–772. https://doi.org/10.1007/s00607-018-0599-4.

**23.** Dr. Manikandan G. Bhuvaneswari G. (2016), FUZZY-GSO ALGORITHM FOR MINING OF IRREGULARLY SHAPED SPATIAL CLUSTERS, Asian Journal of Research in Social Sciences and Humanities, ISSN : 2249-7315 Vol. : 6, Issue : 6, PP. 1431-1452. https://doi.org/10.5958/2249-7315.2016.00297.5.

**24.** Wassan S, Suhail B, Mubeen R, Raj B, Agarwal U, Khatri E, Gopinathan S, Dhiman G. (2022) . Gradient Boosting for Health IoT Federated Learning. Sustainability. Vol.14, No. 24, 16842. pp. 1-17. ISSN: 2071-1050. https://doi.org/10.3390/su142416842 .

**25.** Kalifullah, A.H., Raj, K.B., N,J., Yemineni, R., Kaliyaperumal, K., Degadwala, S. (2022). Graph-based content matching for web of things through heuristic boost algorithm. IET Communications. pp.1–11. ISSN : 1751-8628. https://doi.org/10.1049/cmu2.12531.

**26.** Karn, A.L., Karna, R.K., Kondamudi, B.R. et al. (2022). Customer centric hybrid recommendation system for E-Commerce applications by integrating hybrid sentiment analysis. Electronic Commerce Research. pp. 1-36. ISSN: 1389-5753. https://doi.org/10.1007/s10660-022-09630-z.

**27.** Bhimanpallewar, R.N., Khan, S.I., Raj, K.B., Gulati, K., Bhasin, N. and Raj, R. (2022), "Federate learning on Web browsing data with statically and machine learning technique", International Journal of Pervasive Computing and Communications, Vol. 18, No. 1. ISSN:1742-7371, E-ISSN:1742-738X.https://doi.org/10.1108/IJPCC-05-2022-0184.

**28.** Girish Santosh Bagale, Sudhakar Sengan, Arodh Lal Karn, Bhavana Raj Kondamudi., Deepesh Kumar Srivastava, and Ravi Kumar Gupta. (2022). Measuring the Determining Factors of Financial Development of Commercial Banks in Selected SAARC Countries. Journal of Database Management. Vol. 33, No. 1, pp. 1–21. ISSN: 1063-8016, E-ISSN: 1533-8010. EISBN13: 9781799893301. https://doi.org/10.4018/JDM.311092.

**29.** Chaubey PK, Arora TK, Raj KB, Asha GR, Mishra G, Guptav SC, Altuwairiqi M, Alhassan M. (2022). Sentiment Analysis of Image with Text Caption using Deep Learning Techniques. Computational Intelligence and Neuroscience. pp. 1-11. ISSN: 1687-5265, E-ISSN: 1687-5273. https://doi.org/10.1155/2022/3612433.

**30.** Sanil, H.S., Singh, D., Raj, K.B., Choubey, S., Bhasin, N.K.K., Yadav, R. and Gulati, K. (2022). "Role of machine learning in changing social and business eco-system – a qualitative study to explore the factors contributing to competitive advantage during COVID pandemic". World Journal of Engineering, Vol. 19 No. 2, pp. 238-243. https://doi.org/10.1108/WJE-06-2021-0357.

**31.** Dr. K. Bhavana Raj . (2022). "Industry 4.0: Smart Manufacturing in Industries - The Future".(2022). Machine Learning and Data Science: Fundamentals and Applications, John

 Wiley and Sons, Scopus, Web of Science, Library of Congress, 30 July 2022, Chapter 4,pp. 67 

 74.
 ISBN
 9781119775614,
 E-ISBN
 9781119776499.
 DOI:

 https://doi.org/10.1002/9781119776499.ch4
 , DOI:10.1002/9781119776499.
 DOI:

**32.** Dr. K. Bhavana Raj. (2022). "Crowdsourcing for Sustainable Smart Cities and Their ICT Practices". Advances in Geographical and Environmental Sciences - Smart Cities for Sustainable Development. Springer, 2022, pp. 199-210. ISSN 2198-3542, E- ISBN 2198-3550. ISBN 978-981-16-7409-9, ISBN 978-981-16-7410-5 (eBook). DOI: https://www.springer.com/series/13113. https://doi.org/10.1007/978-981-16-7410-5

**33.** Gothai, E & Bhatia, Surbhi & Alabdali, Aliaa & Sharma, Dilip & Raj, Bhavana & Dadheech, Pankaj. (2022). Design Features of Grocery Product Recognition Using Deep Learning. Intelligent Automation and Soft Computing. Vol. 34. pp. 1231-1246. 10.32604/iasc.2022.026264.

**34.** Dr. K. Bhavana Raj . (2021). "Security and Well-being in Tech-Savvy Urban Communities". Interdisciplinary Research in Technology and Management, Proceedings of the International Conference on Interdisciplinary Research in Technology and Management (IRTM, 2021), Chapter 47, pp. 323-326. ISBN: 978-1-003-20224-0 (ebk). DOI: https://doi.org/10.1201/9781003202240 .Taylor & Francis (CRC Press).

**35.** Dr. K. Bhavana Raj. (2018). "Efficiency Analysis of Indian Banks using Data Envelopment Analysis (DEA) Model". Global and Stochastic Analysis (GSA). Vol. 5 No. 8, pp. 541-552. ISSN: 2248-9444.

**36.** Dr. K. Bhavana Raj. (2018). "Measuring Inefficiencies using Stochastic Frontier Model-Evidence from the Indian Banking Sector ". Global and Stochastic Analysis (GSA). Vol. 5 No. 8, pp. 553-560. ISSN: 2248-9444.

**37.** Akpah, B. (2019). Land of Tales (Poetry Collection) Ibadan: Kraftbooks. Pgs.1-100

**38.** Akpah, B. C. (2020). Poetics of Advocacy: Womanhood and Feminist Identity in Patricia Jabbeh Wesley's Where the Road Turns.

**39.** Akpah, B. C. (2018). Voice of liberation: A womanist reading of Lynn Chukura's Archetyping'. Literary and Linguistic Perspective on Orality, Literacy and Gender Studies: A Celebration of Oluwatoyin Jegede, 60, 221-234.

**40.** Akpah, B. C. (2018). Satire, humour and parody in 21st Century Nigerian women's poetry. The European Journal of Humour Research, 6(4), 133-144.

**41.** Akpah, B.C. (2018). X-raying contemporary consciousness in the poetics of Northern Nigerian women. Ife Journal of Language and Literature. Obafemi Awolowo University, Nigeria. www.http//www.oauife.edu.ng ISSN: 2467-8635 pg 188-203.

**42.** Akpah, B.C., Jayeoba, O.O & Sonde, O. S. (2018). Traditional African nidation in works of selected contemporary African poets Journal of Capital Development and Behavioural Sciences Vol. 6 Issue One. Ibadan: Lead City University Press. Pp.85-100.

**43.** Akpah, B.C & Jayeoba, O. S. (2018). Overview and tracking of modern African poetry Journal of Capital Development and Behavioural Sciences Vol. 6 No.2 ISSN: 2449-0679 Ibadan: Lead City University Press. pp. 127-144

**44.** Akpah, B.C., & Ade Adejumo (2016). Migration, Peripheralism and Dilemma of Being: A Post-colonial Reading of Adichie's The thing around our neck. Africa: Journal of Contemporary Issues. Vol. 14. No. 14.

**45.** Akpah, B.C. (2018). Comparative feminist perspectives in Lola Shoneyin's So All the Time I

**46.** Was Sitting on an Egg and Halima Usman's Spellbound in Language and Literature for Communication in Humanities Societies: Papers in Honour of Late Dr. Elizabeth Amagah. Port-Novo: Africatex Media Pp.119-134.

**47.** Akpah, B.C. (2018). Voice of liberation: A womanist reading of Lynn Chukura's Archetyping. Festschrift Essays in Honour of Professor Oluwatoyin Jegede @60. Ibadan: Kraft Books Pp. 61-69.

**48.** Akpah, B.C (2019). Empowerment in Nigerian women's poetics. Perspectives on Language, Literature & Human Rights: Essays in Honour of Professor Florence Onyebuchi Orabueze. (Eds) Chukwumezie, T. M. E, Ogenyi, L.C, Ononye, C.F, Ejesu, O.A. Pp.89-110.

**49.** Akpah, B. C. (2022). Poetics of peacebuilding and reconciliation: a socio-feminist reading of Mabel Osakwe's Dessert of Blooms International Conference of Gender Studies in Africa (Book of Abstracts) (ed.) Ssali, S. N. Makarere University School of Women and Gender Studies https://events.mak.ac.ug//

**50.** Akpah, B.C. (2022). Negotiating National Cohesion and the Rhetoric of Herdsmen Attack in Ahmed Yerima's Hendu Canadian Association of African Studies 2022 (May 16-19, 2022 - Virtual) https://caas-acea.org

**51.** Patil, M. B., & Math, L. (2022). A novel approach for optimization of handover mechanism using metaheuristics algorithms. Measurement: Sensors, 24, 100467. https://doi.org/10.1016/j.measen.2022.100467

**52.** Patil, M. B., & Math, L. (2022). A novel approach for optimization of handover mechanism using metaheuristics algorithms. Measurement: Sensors, 24, 100467. https://doi.org/10.1016/j.measen.2022.100467

**53.** Patil, M. B., & Patil, R. (2021). Fractional squirrel–dolphin echolocation with deep belief network for network-controlled vertical handoff in disparate and heterogeneous wireless network. International Journal of Communication Systems. https://doi.org/10.1002/dac.4893

**54.** Patil, M. B., & Patil, R. (2021). Fuzzy Based Network Controlled Vertical Handover Mechanism for Heterogeneous Wireless Network. Materials Today: Proceedings. https://doi.org/10.1016/j.matpr.2021.06.364

**55.** Patil, M. B., & Patil, R. (2021). A network controlled vertical handoff mechanism for heterogeneous wireless network using optimized support vector neural network. International Journal of Pervasive Computing and Communications, ahead-of-print(ahead-of-print). https://doi.org/10.1108/ijpcc-07-2020-0089

**56.** Patil, M. B., & Patil, R. (2020). A Survey on Handover Algorithms in Heterogeneous Wireless Network. Advances in Intelligent Systems and Computing, 277–285. https://doi.org/10.1007/978-981-15-6584-7\_27

**57.** Patil, M. B. (2011). Vertical handoff in future heterogenous 4G network. International Journal of Computer Science and Network Security (October 2011).

**58.** Patil, M., & Patil, R. (2022). A novel hybrid technique with optimization for enabling Qos for network controlled vertical handoff mechanism in heterogonous network. 7th International Conference on Computing in Engineering & Technology (ICCET 2022). https://doi.org/10.1049/icp.2022.0628

**59.** Malage, R. N., & Patil, M. B. (2021). Location-Based Pomegranate Diseases Prediction Using GPS. Innovations in Computer Science and Engineering, 375–383. https://doi.org/10.1007/978-981-33-4543-0\_40.