

## A PARADIGM SHIFT IN DIGITALIZATION IN RURAL ENTREPRENEURSHIP

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### Abstract

Today within the innovative system digital entrepreneurship is an essential driver. The major aims, structure and other networking mechanisms of overall business system ultimately affect various levels and dimensions of innovation system. The present study aims to fill the fissure how digitalization occurring in rural entrepreneurship. As stakeholders of rural entrepreneurs are not governed by any formal authority the organizing issue is challenging. In today, rural entrepreneurship considerably impacts major issues, including economic development, food supply, employment and social security. A systematic review of literature is conducted in order to gain a rigorous understanding of hybrid concept of digital entrepreneurship and its role within transformation of the innovation system. Due to poor employment opportunities and complexity of running their own businesses increasing number of people are moving from rural to urban areas which have become a problem of political unrest. As such problems are surfaced in rural areas facing entrepreneurship in remote and rural areas require modern, innovative business leaders, skillful political thinkers and also greater number of trained professionals and academics who can think dynamically and also bring their ideas into broader societal use. There will be an interplay between evolving nature of rural lifestyles and rural enterprises wrought through technological development. Responsible technological development and also responsible business practices will be key to engendering increased trust and collaboration required amongst agricultural value chain in order to fully realize potential benefits of digital entrepreneurship. By creating employment opportunities for people living in proximate village's business activities improve the standard of living for local communities and also provide sources of entrepreneurial activity to establish industrial and business units in this rural sector of economy. Regardless of the extent to which rural entrepreneurs engage in variety of activities which range necessary far beyond simply agriculture they need to change their thinking and approach which certainly confront them in rural regions worldwide. Within innovation systems as well as socioeconomic system in general such understanding requires further extended research in fields related to method, content and theory.

**Keywords:** Digital entrepreneurship, socio-economic system, employment opportunities, transformation, innovation system

### INTRODUCTION

India is developing at a very fast rate and was considered primarily as an agricultural economy. It has now become a knowledge economy. Also the economic performance and innovation success of countries has increasingly dependent on digital technology developments. Digitalization is broadly associated with changes that relate to big data analytics, adoption of

digital technologies and also increase in their utilization. Evolution of information and communication technologies (ICTs) revolution in India has certainly created a technological divide between urban and rural areas and many Indian companies and well educated individuals enjoy benefits of ICTs. These technologies were not accessible or even affordable for majority of population earlier. The divide is certainly exacerbated by deeply ingrained disparities of gender and social class which necessarily determine who can or who cannot use technology. Despite recent Liberalization, Privatization and Globalization since 1990, accessibility as such is hindered by language barriers and lack of suitable content and applications in local languages. The economic impact of digitalization of rural India is certainly far and wide. The life in Indian villages is simple and isolated; although they are connected now a day with cell phones and digital television transmission, yet they are cut off from the main stream of urban areas due to poor road connectivity and market for their agricultural commodities. The health, educational and civil facilities are also either absent or not up to the mark. Making such villages as 'Smart Village' is surely a noble program announced by Government. But no one in villages has seen what exactly, in the Indian conditions, smart village means. The objective of this paper is to discuss about components of Digital India and its nine pillars, adaption of 'look at Villages' policy and the smart villages driving towards smart India and the prerequisites of a smart villages cluster. The potential benefits of digitalizing the agrifood sector are convincing but it will require major transformations of farming systems, rural economies, communities and natural resource management. This will be a challenge and requires a systematic and holistic approach to achieve the full potential benefits.

### CONCEPT OF DIGITAL INDIA

The vision of Digital India program is inclusive growth in areas of electronic services, products, manufacturing and job opportunities etc. and it is centered on three key areas - Digital Infrastructure as a Utility to Every Citizen, Governance & Services Demand and Digital Empowerment of Citizens. Bharat Broadband Network Limited acts as the initial milestone of the program, which executes the National Optical Fiber Network project and also the custodian of Digital India (DI) project. Bharat Broadband Network Limited (BBNL) had ordered United Telecoms Limited to connect 250,000 villages through broadband, and planning to create 28,000 sets of BPOs in various states and set up at least one Common Service Centre in each of the gram panchayats in the state. These are the initial steps of Digital India expected to be completed by 2017.

These are the points that the Government of India hopes to achieve growth on multiple fronts with the Digital India Program. The government aims to target 'Nine Pillars of Digital India' as follows:

1. Broadband Highways
2. Universal Access to Mobile Connectivity
3. Public Internet Access Programme
4. E-Governance - Reforming Government through Technology
5. E-Kranti - Electronic delivery of services
6. Information for All
7. Electronics Manufacturing
8. Digital or IT for Jobs
9. Early Harvest Programmes

### SIGNIFICANT IMPACT OF DIGITALIZATION

Today customers are exploring new buying experience as benefits of technological innovation. With evolution of digitalization customers today are becoming leaders. Providing better user experience is the ultimate goal of any company. Certainly a top notch user experience is the best way to engage the customer's also differentiated experience will increase customer loyalty and

improve feedback. By analyzing products/services with the initiation of digitization, customers are influencing the overall market ecosystem by analyzing various products and services. Customers are exploring the new buyer experience with online shopping, online transactions etc. The present age era is called as "Information age" as customers are far too particular about knowledge on products/service. Customers off late are reviewing the product with research aspects to gain knowledge before purchase. Economic benefits are also being captured through digitalization and it has also become quite easier for companies to provide information to customers. Let's consider an example of e-ticketing services wherein the digitalization has made it quite simpler and even convenient to essentially book your tickets just by logging into required websites. After the payment process one will receive a confirmation mail/SMS and websites are also optimized quite nicely after payment process. The websites are optimized for easy access and navigation as well as easy payment facilities. No need of waiting at queues or even contacting agents for tickets besides you can easily book your tickets by sitting at home.

### REVIEW OF LITERATURE

**Philip Alford & Stephen John Page (2015)** in their article "Marketing technology for adoption by small business" emphasize that the adoption of technology for marketing is very much essential for the survival of small businesses and yet little is understood about owner-manager practice in this area. The research paper aims to address that gap through a qualitative study of 24 owner managed small business operating mostly in the visitor economy. The author addresses that the internet has the potential to transform small and medium enterprises (SME) marketing in a number of areas including customer relationship marketing, customization, business to business collaboration, access to new markets, co-creation of the product with customers and also improving internal efficiency. As per the industry sources such as the consulting firm McKinsey which noted in 2011 that SME's that which have a strong web presence do grow twice as quickly as those who have no or even minimal presence. However, despite the importance the evidence also suggests that SME adoption of the internet is also limited. The study also focuses on the owner-managers of small and micro enterprises (1-49 employees as defined by European commission) with evidence suggesting that this subgroup do warrant unique investigation within the SME population. In the research paper in order to address the gaps in knowledge, the objectives of this exploratory study are firstly to review the current literature on the adoption of technology for marketing by small businesses and also owner-managed businesses in particular, secondly to empirically investigate marketing technology for adoption by small business and thirdly to understand the barriers which prevent adoption of technology for marketing and fourthly to identify ways in which small businesses can be more effectively supported in their use of technology for marketing and also to identify future directions in this particular field. A qualitative methodology was deployed and data was obtained from convenient sample of 24 owner managed tourism related enterprises in order to address the objectives of the study and also to provide more insights. For the entire project the research design included three phases: the first was exploratory research designed to investigate levels of adoption of technology for marketing, second was an action research phase whereby the participating businesses undertook online marketing campaigns and the final phase reflected on the outcomes and also learning that took place.

**Lars Bollweg, Richard Lackes, Markus Siepermann, Arbnesh Sutaj, Peter Weber (2016)** in their research article discuss on the increasing digitalization of commerce has certainly put local owner operated retail outlets (LOOROs) under pressure to adapt their overall business models to new technological and competitive environment as well as frequently changing shopping habits of their customers. The retail landscape of today is experiencing seismic changes. The low growth rate environment certainly puts local owner operated retail outlets under immense pressure. For most of the LOOROs the diffusion of digital retail services seems to hit a barrier. The literature review gives an overview of related studies looking at the adoption of e-commerce and e-business technologies by SMEs. The authors conducted a structured literature

review to get an overview about the current state of research using TOE framework in the context of adoption of new technologies in SMEs. The authors collected 138 research papers and examined all abstracts and selected 22 papers with clear focus on TOE framework and adoption of technologies for further investigation. The authors define research model with four constructs, the first construct is named 'Competition' and is derived from main sales channels of LOOROs, the local store and online channel.

**Carmen Leong, Sue Newell, Lili Cui (2016)** in their research article focus on underserved communities as best recipients of aid to stimulate ICT enabled development. The authors conduct an in-depth case study of two remote villages in China, that which can empower a marginalized community that which can give rise to a rural e-commerce ecosystem that which can aid self-development. The authors however propose the concept of digital empowerment to explicate their findings in the exploration of community driven-development. Firstly the authors identify the critical actors of rural e-commerce ecosystem and also how they use ICTs, second they illustrate how the same ICT can essentially be used for different affordances by actors in the evolution of rural e-commerce ecosystem. Case methodology is adopted which is appropriate for exploratory research. Data for the study purpose is collected from interviews and archival data.

**Arturo Serrano Santoyo, Veronica Rojas Mendizabal (2017)** in their article entitled 'Exploring a complexity framework for digital inclusion interventions' discuss the current global scenario of technology change and also social change which make necessary to rethinking the vision methods employed by development agencies, governments and other private sector to impulse socioeconomic development through adoption and application of Information and Communication Technologies (ICT). The paper highlights the significance of societal, cultural and economic factors that which contribute to redefine the nature of digital divide as new scenario is emerging where ubiquitous and unlimited connectivity is fuelled by broadband and mobility convergence. The authors try to address conceptualization of the digital divide as a multidimensional phenomenon that which is conceived as a process more than a condition regarding adoption, application and appropriation of digital technology and other such contents to support socioeconomic and cultural development of a social group or a region. The authors also discuss about the development of epistemic and also conceptual frameworks to acquire an integrated approach towards understanding of the major implications and subsequent impact of digitalization in society.

**Koen Salemink, Gary Bosworth (2017)** in their research article "Rural development in the Digital age: A systematic literature review on unequal ICT availability, adoption and use in rural areas" present a systematic review of 157 papers on digital developments and rural development in many advanced countries. However in order to better understand the potential impacts of the coming Next Generation Access revolution which focuses on the general conclusions. The authors also distinguish two major strands of research namely inclusion research and connectivity research. The others state that public policies to promote the availability of improvement of data infrastructure are quite essentially responsive, and rapidly outdated by market developments. Rural communities have been struggling to keep up with developments in digital connectivity. Today accessing the internet through telephone lines is only one of several technologies available.

**Lawrence Mpele Lekhanya (2018)** in their research article present new established understanding and knowledge of digitalization of rural entrepreneurship as to how it can help entrepreneurial survival and growth in rural industries and also what are practical and theoretical implications. In today's world the digitalization concept of businesses is major issue of interest, however it is still of concern in rural South African entrepreneurship sector. Research methodology adopted was empirical in nature and collection of primary data was

done from 501 owners/managers operating in rural areas of KwaZulu –Natal (KZN) province. As survey instruments the mixed questionnaire of quantitative and qualitative was used. At the entrepreneur's business premises the questionnaire was distributed and they were given time of 7 days to respond while the researcher and research assistants involved as part of study were always available to assist wherever necessary. Besides, the major findings of the survey also revealed that large number of participants is not using their digital technology for business purpose but rather they are using it for other things such as private communication and also social friendship.

**Nesterova Z.V, Solosichenko T Zh, Makovkina E I (2018)** in their research article examine issues that which arise from active and effective implementation of significant digital technologies in today's modern business environment. In digital activities nonprofit organizations, companies, state authorities and individuals get increasingly involved. The authors in the research paper analyze the digitalization of business processes in Austria. As one of the European Union (EU) leading economies the country is selected for case study that is intensifying the major efforts in the implementation of digital technologies. Concerning the possible ways to promote and in turn facilitate digitalization the authors identify and analyze different technologies. The authors opine that digitalization has significant impact on profitability, productivity and sales revenue of a business. The authors highlight the significance of five technologies that which have a major impact on the new industrialization which include 5G communication, 3D printing, virtual reality, block chain and artificial intelligence.

#### INNOVATION SYSTEM CONCEPTION

In our research, the innovation system is considered as a met system that provides the conditions for entrepreneurial activities and further innovation performance (within both opportunities and limitations). This understanding is evidenced by studies in the field that relate an innovation system primarily to a network of elements that enables the generation and distribution of knowledge that enhances innovation performance.

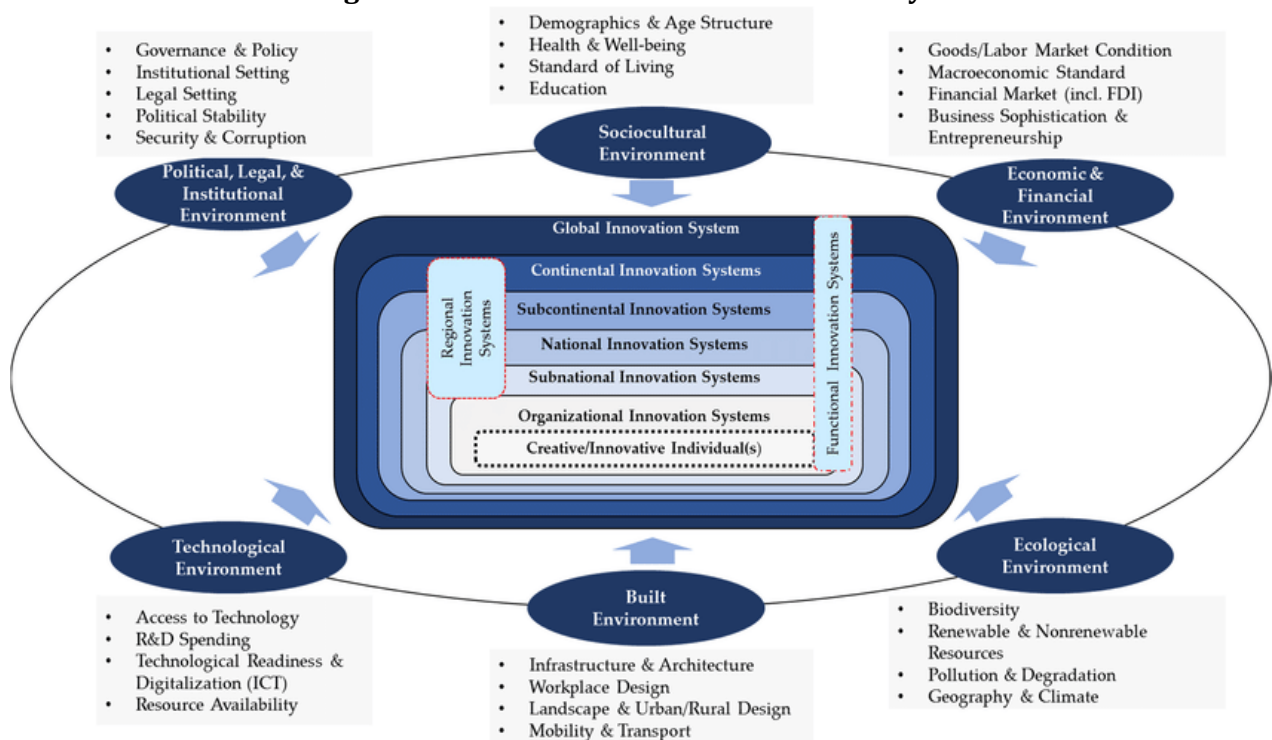
Dealing with societal challenges and enhancing a system's resilience, an innovation system may be understood as an interactive learning system with a focus on the enhanced learning capability of individuals, organizations, and regions as part of capacity building in order to meet new challenges and to enable an innovation-based economic performance. An innovation system is formed not only on a macro level (as a network of institutions) but also on a micro level (as an internal organization of the company with the system of internal relations) and is characterized by hierarchical and structural dimensions. The hierarchical dimensions include the levels from the individual to the organizational, regional, national, sub continental, continental, and global. Such divisions are also overlapped by sectoral and regional dimensions (e.g., urban, rural, Meta regions). Within the structural dimensions, the innovation system may be defined by the following dimensions: (1) political, legal, and institutional; (2) sociocultural; (3) economic and financial; (4) technological; (5) ecological; and (6) infrastructural (physical and virtual space) dimensions.

Digital technologies change business architecture through the transformation of business models.

More specifically, the implementation of digital artifacts and the utilization of digital platforms, as well as other technical affordances, foster the formation of business model innovations that differ from traditional business frameworks along the entire value chain from production to commercialization. These mechanisms are reflected in the convergence of digital business, as well as reprogram ability, combinability, and generatively properties that allow the involvement of different digital artifacts and devices, separate the functional aspects and physical embodiment of the device, and provide further recombination's of elements for the development of further functionality of the device. The ability of a company to participate in a digital transformation often depends on several prerequisites for business digitalization, such as

digital orientation (within market and entrepreneurial orientations), digital capabilities and particularly, managerial strategies based on an understanding of digital processes. However, digital transformations depend on more than managerial actions and strategies. Schallmo et al. (2017) applied several categories in their work that outlined the preconditions for the development and implementation of a digital business model and combined them in a transformation roadmap. Several researchers consider, in addition, IT capability and internal IT infrastructure maturity as other important preconditions in an intensification of business digitalization and organizational performance during business transformations.

Below figure to show Structure of the innovation system



### ECONOMIC IMPACT OF DIGITALIZATION ON RURAL AREA

Digitalization certainly increases employment opportunities and foremost benefit of digitalization is to increase employment opportunities especially in rural areas. Large number of small entrepreneurs has got employment in provision of internet in rural areas. In provision of internet in rural areas large number of small entrepreneurs has got employment. Improvement in standard of living of the people of improving their income is one of the major benefits of digitalization. Today due to digitalization aspects rural people are using internet services like Lifeline India and are also getting awareness regarding various plant diseases, new methods of farming etc. They are also able to generate information on various diseases of farm animals and also methods by which they can remain healthy and in turn their output also increases. Today rural youths are getting trained in using computers, MS office and internet. Also internet kiosks are conducting educational training programs for rural youth and large number of rural youths is being trained through village knowledge centers. Today rural people are quite aware of internet and have understood the importance of English as a main language required for internet.

### FRAMEWORK FOR RURAL ENTREPRENEURSHIP

Certainly business working in rural environments cut off essentially from primary metropolitan sites can be defined as part of rural entrepreneurship and such enterprises established by entrepreneurs function under extremely complex and turbulent business conditions presented by remote and underdeveloped areas wherein the local production is primarily committed to

subsistence farming. Decision making, independence, innovation, forecasting, implementation and achieving success are primary concepts in entrepreneurial practice. However, in order to be better developed to improve its broader economic participation rural entrepreneurship needs to be developed. Greater business success could actually be a transformation in how rural entrepreneurship is practiced and can attract new entrepreneurs. Thus digitalization can be described in terms of infrastructural processes associated with digital technologies in which analogue information is actually transcribed to digital form and also applied in broader social and institutional contexts. Rural enterprises can certainly be benefitted from use of local resources that which can produce products or essential services to meet local demands since they are readily able to access cheap labor from within their communities. Although, rural enterprises can benefit from use of local resources and can also produce products or services to essentially meet local demands they are also able to access cheap labor from within their communities. It is however also acknowledged that no single unified and accepted definition for term 'entrepreneurship' exists; it is just one dimension of strategic posture, which encompasses risk taking tendency of businesses, their ability to compete aggressively, their overall proactive initiatives and product innovations which are all entrepreneurial activities and which also indicates that all manner of organizations therefore behave in a entrepreneur like scenario. Rural entrepreneurship represents informal sector of economy characterized by small scale businesses those including small trade and artisans. It can also be considered as an important solution for reducing poverty, minimizing rural-urban migration and also addressing economic disparities and thus alleviating unemployment in developing rural and underdeveloped areas. Some of the major reasons as to why rural entrepreneurs are facing difficulties to successfully establish locally based industries include exodus of skills, lack of educated individuals, financial limitations and also inefficient technical and conceptual abilities. Certainly by creating employment opportunities for people living in proximate villages and also provide sources of entrepreneurial activity their business activities can improve standard of living to establish industrial and business units in this rural sector of economy. Due to number of challenges which rural entrepreneurs confront regardless of the extent to which they engage in variety of activities which also range far beyond simply agriculture they are still not fully industrialized in their way of approach and thinking abilities. The challenges also lead to success of ambitious start ups remaining low with factors such as market sizes, government policies and also geographical profiles which contribute to influence their low term performance. In terms of overall structure of how businesses are actually organized and also managed and also how the characteristics of individual entrepreneurs are exhibited there is ostensibly very little difference between rural and urban enterprises. Thus it can be interpreted that there is actually no specific category for definition of rural entrepreneurs beyond being individuals who actually manage their business ventures in rural settings.

### **MAGNITUDE OF RURAL ENTREPRENEURSHIP DIGITALIZATION**

For the development of competitiveness of rural businesses the digitalization of rural entrepreneurship is tremendously important. Also digitalization is highly effective growth strategy for businesses in all emerging markets across the globe and there is also much evidence that in many countries improvement of entrepreneurial activities is indeed regarded as a strategy to actually boost national productivity and job creation which certainly improves their overall economic independence. Amongst local communities entrepreneurial actions strengthen personal and collective capabilities and SMEs are currently regarded as mechanisms for overall economic growth and equitable development in creating labor intensive, capital savings initiative that which ensure the creation of many new jobs. In development of self-confidence, business and other skills and socio-economic encourage the women small scale businesses play a survival role for poorer households. More specifically by minimizing migration of rural populations to urban areas, improving the standards of living for local communities and also promoting rural tourism related art activities small businesses provide employment opportunities for rural communities. In rural areas enterprise and entrepreneurship are drivers

of economic growth which does indicate that ongoing challenges facing traditional rural sectors and also future success of rural economies are quite inextricably linked to capacity rural entrepreneurs who possess to innovate and also identify new business opportunities that which create jobs and also income in these areas. As a strong agent for socio-economic diversification entrepreneurial development in the form of rural SMEs has emerged quite considerably.

### **PROS AND CONS OF RURAL ENTREPRENEURSHIP DIGITALIZATION**

Digitalization poses challenges as well as opportunities. Some of the major pros and cons are as under:

Pros of rural entrepreneurship digitalization:

1. Diminish the business costs
2. Right of entry to world markets
3. Give strength to home grown entrepreneurs
4. Speeding up the production process in manufacturing enterprises
5. Marketing connections
6. Improved business transactions
7. Wider distribution of customer service improvements

Cons of rural entrepreneurship digitalization:

1. Sky scraping setting up costs and maintenance issues
2. Technologically advanced skills are very much required
3. Issue pertaining to safe cyber security
4. Lack of privacy involved and also data protection laws

Indeed the cost benefits and importance of rural entrepreneurship must be clearly stated and understood as well as encouraged such that it can act as an important promotional tool for strengthening the overall company brand. However the concept of digitalization will improve and also bring new changing trends in most of the emerging markets including rural industries and also scale up product development and also product diversification aspects as well as promoting the idea generation through use of social media.

### **CONCLUSION**

The overarching goal of this research was to understand how current digital tendencies transform entrepreneurial and business frameworks and how these transformations are implemented in the innovation system. An additional implication includes the understanding of how the resilience and sustainability of the socioeconomic system and its interrelated dimensions may be affected by disturbances and vulnerability factors resulting from social transformations. With respect to innovation systems, the results presented in this paper suggest the application of a systems science approach in order to understand how the particular dimensions of the innovation system are interrelated. This includes the capture of potential vulnerabilities related to entrepreneurs and stakeholders and the understanding of how the resilience and sustainability of the innovation system may be influenced by internal as well as external disturbances. Due to various challenges such as lack of broadband connectivity and electricity in many rural areas there is lot of improvements being done for improving rural business of rural communities as well. Major barriers including poor telecommunications infrastructure, management incompetence, lack of marketing skills and also insufficient entrepreneurial knowledge are faced by rural entrepreneurs and hence in this regard it is suggested to both government and private sectors that both should be encouraged to work together hand in hand with coordinated efforts and come up with policy development for rural areas. Steering agencies responsible for championing and coordinating rural entrepreneurial



digitalization should be established by Central governments for enhanced modern technological networking systems for welfare of rural communities.

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