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Study of use of Artificial Intelligence as an Enabler for Startup Success

Ph.D Research Scholar Saumendra Mohanty
Sharda University School of Business Studies
Noida , UP, India
sammohanty141@gmail.com

Abstract - **Artificial Intelligence is turning out to be a godsend for startups. Funding of artificial intelligence-focused companies reached approximately $9.3 billion in the U.S. in 2018, an amount that will continue to rise as the transformative impact of AI is realized. AI-based analysis is used by these Startups to make data-driven decisions. AI in business analytics can play a very crucial role in the overall success of startup organization. Advanced computing tools, machine learning, predictive Artificial Intelligence is turning out to be a great enabler to Startups to gain early traction, Big Corporation interest & investor funding over other non AI based technology Startups. As business leaders and innovators race to reach the promise of artificial intelligence to deliver a competitive advantage as well as cost and time savings, the technology is altering industries from finance to manufacturing with new products, processes and capabilities. Startups are taking advantage of AI because it enables them to provide their customers with personalized marketing, which in turn increases engagement, helps to enhance customer loyalty and improve sales, saves time and money by automating and optimizing routine processes and tasks. Increase productivity and operational efficiencies and make faster business decisions based on outputs analysis and AI have fueled the growth of new-age business intelligence tools.A recent study of Artificial Intelligence firms from three continents and 18 industries, picked show a clear trend in this regard .Many large companies have invested or acquired those Startups which have used AI /ML Algorithms**

Keywords- **Entrepreneurship ; Artificial Intelligence ;AI ; Big Data; Machine Learning; Smart Entrepreneurship**

I. INTRODUCTION AND ORIGIN OF THE RESEARCH PROBLEM

Artificial Intelligence is being deployed in companies worldwide (McCorduck, 2009; Wåge and Crawford, 2017). Innovation in sales pitch is always been a key point for business success especially for startups. Artificial intelligence has shown its potential to characterize consumer needs, sort them out and pay them with a sales pitch they will think twice to refuse.

It doesn't require any input from programmer as its sort-out, learn and deploy actions using its algorithms (Antonescu et al., 2018). A wide range of themes in AI research exist as; Decision Making (Artificial Neural Networks, Deep Learning, algorithms, Learning System, Decision Support System and Deep Neural Networks), application in various domains and Data Mining (Dwivedi et al., 2019). Multinational businesses like Uber, Airbnb, Google, Facebook, Tesla and other companies are using AI extensively to sort out and provide services to a huge set of community by modeling their needs into a sustainable model. Though business model interaction is quite diverse and complex, but quite effective in flourishing a new business. Two possible approaches for AI are Symbolic AI (using numbers and symbols) and Neural AI (involving Machine learning) with later responsible for exponential growth of AI use in business flourishing worldwide (Li et al., 2019). India is becoming a global attention as a suitable investment center with being ranked 3rd as most desirable global startup ecosystem (Economic Survey of India 2018-2019). The startups in India face many issues (Kaur, 2017) and AI can narrow down the risk gap for new businesses (Ransbotham et al., 2017).

Being used worldwide, AI has potentially little application in new startups of developing countries due to various reasons, one being economics of development. Mixing of symbolic and neural AI can provide a sustainable solution to address issues like, reasoning, knowledge presentation, data transfer and processing (Besold et al., 2019). To increase chances of startup success, AI must be involved into the business model (Vempati, 2016; Li et al., 2019). To ensure safety and sustainability, a good business plan must be equipped with AI to ensure rapid growth with minimal risk. Business could be partially or totally dependent upon AI

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in business model depending upon needs and wants of consumers. A wide range of AI based startups exists in market like AI market, Farm manager and Business Analyst. Virtuous cycle of AI involves; data manipulation, product marketing and more users (Li et al., 2019). Machine learning is an effective technique to deploy AI for data processing and decision making in business startup. In supervised machine learning; face, voice and handwriting recognition and survey data sets can be used to develop an AI model suitable for business expansion (Das et al., 2015).

Startups in India are emerging as supportive pillar of growing community (Jan, 2016; Manshani and Dubey 2017) but facing several issues (Kaur, 2017). The extent of AI interference in success of Startups in India is quite unknown in quantitative terms. The present study is proposed to check influence of AI incorporation in success of different startups in various industrial Domains of India with following objectives:

- Statistical analysis: Comparing role of AI in startup success
- Creation of suitable AI model for a new startup

II. STATUS OF RECENT RESEARCH AT NATIONAL AND INTERNATIONAL LEVELS RELATED TO THE PROBLEM (WITH RECENT REFERENCES)

Review summarized by Srivastava, (2018) has shown that AI has significant contribution in fourth industrial revolution. India has a wide range of startups totally working on AI to perform various works from job seeking to stock management and much more. If AI can be incorporated in all startups, then country can attain special and ever desiring economic status in Asia.

In current economy of India, women startups are also making their place in male driven society with quite sustainability and success. Major role of women driven startup success is their knowledge of work, risk taking and need for achievement plus government support. Though various encouraging factors are presently facilitating women entrepreneurship, few (fund raising, emotional choice) issues are dragging their efficiency. Government initiated startup plans can ease the hurdle of women entrepreneurship if applied in sub-urban areas as well (Manshani and Dubey 2017).

Worked published by Dinesh and Sushil (2019) has shown that every potential startup can succeed in attracting sustainable customer and thus generating revenue if its based upon some key factors. Strategic Innovations is a main and leading factor responsible for attainability of targeted business goals for any startup. This investigation was a comparison between two startups; 1) Product based Startup (Agri. Products), 2) Service based Startup (Technology). Total 11 factors of strategic innovations were considered as (Innovative Firm structure, Resource Management, Operation, Sales Channel, Marketing, R&D, Team Learning, Strategic Networking, Technology Innovation and Firm level Entrepreneurial Orientation). In technology innovation, both startups have shown use of AI as they have deployed social media and e-commerce to enhance their product sales. In summarized work, it was concluded that, all innovative strategies were interlinked for a successful business startup.

Artificial Intelligence can also be helpful in improvement of healthcare facilities in India as described by Javiya, (2018). Health care is $100 billion economy in India and improvement to which can lead to huge economic benefits to country. The AI application in hospitals, pharmacies, diagnostic centers, medical equipment suppliers, and in medical insurance can lead to efficient and profitable healthcare system in India.

1. Role of AI in business growth and success

Knowledge mining is a key point of global attention now a days and AI is playing a vital role in focused knowledge collection, sorting and summarization (Liebowitz, 2001). For a new startup, launch of brand new product comes with a challenge of its sustainable sales in uniform distribution in ever competing market. To ensure safe and risk free development of space of new products in market computational intelligence approach can be adopted (Relich, 2015). Enough survey data is required for effective development of AI based computational decision making systems for effective product diffusion into market.

Artificial Intelligence based on neural network can be effectively used to monitor and assess overall performance of any business. In a similar work, Jha and Chockalingam, (2009) has shown potential of back propagation based 5-5-1 feed forward neural network working on total 20 factors (11 of success and 9 responsible for failure) to predict quality insurance of construction work. Their work has shown possible potential of AI development tool to predict performance of construction work for possible quality work success. The same model can be deployed by startups to decrease risk and enhance chances of their bossiness success.

III. OBJECTIVES

- Screening possible reasons behind success of new startups
- Computational estimation of startup success chances via machine learning and neural network development
- Practical application of model/ Field evaluation.

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IV. DATA AND DETAILED METHODOLOGY/TESTING OF HYPOTHESIS

1. Gap of study:

Though various investigations are available citing role of AI in business success, but little work is done on comparison of startups with and without AI incorporation into their business network. Present investigation is proposed to screen out AI factors responsible for startup success and machine learning will be involved to create a model for prediction of startup success based upon data sets manipulation done by created algorithms. This work can lead to development of a suitable tool in which qualitative norms and working conditions, economics and other factors can be put into models for quantification of % chances success of new startups. Our work will be planned according to following methodology.

2. Methods:

2.1 Survey conduction:

For an effective model creation, huge number of qualitative and quantitative data sets is required to be obtained. Quantitative data sets involve; Age of workers, Investments, Stock value, Site area, AI tactics and methods, number of qualified personals etc. While qualitative data sets involve; experience and devotion of workers, working hours, Labor health and e-commerce expansion. Above mentioned data sets along with many other explained by Dinesh and Sushil (2019) will be collected with special emphasis on AI techniques. Collected data will be incorporated into machine learning algorithm of XLSTAT.

2.3 Data manipulation and machine learning

Data manipulation will be done in machine learning via artificial neural network generation in XLSTAT using machine learning. Various ways of AI incorporation into business models will be isolated treatment factors for both startups (with and without AI incorporated business startups). Fixed Major fields of data sets will be as mentioned by Fernandez et al., (2013) described below. Plus, AI will be added as hypothesis parameter.

- Working Capital
- Total Assets
- Retained Earnings/Total Assets
- Earnings Before Interest and Taxes
- Total Assets
- Market Capitalization/Total Debts
- Sales/Total Assets
- Manager academic level
- Company technological resources
- Quality policies
- Trademark
- Employees education policy
- Number of innovations areas
- Marketing experience
- Knowledge of the business area
- Openness to experience

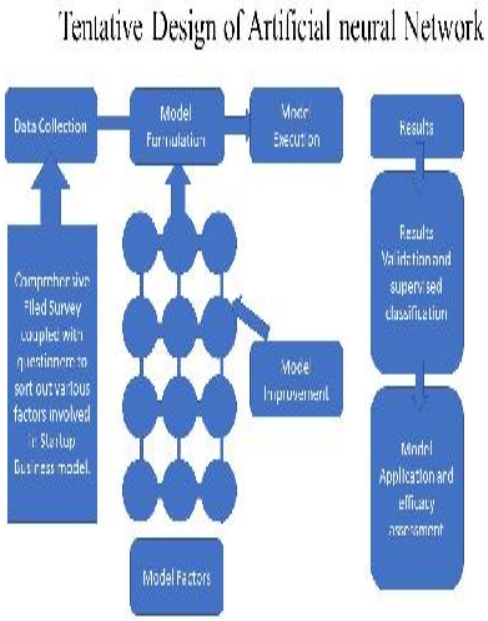
2.4 Artificial Intelligence

- Type
- Extent
- Budget
- Exposure
- Trained Staff
- E marketing

3. Field screening and classification of new startups

Twenty new startups will be targeted for supervised calibration of generated model. For this, close observation of startup tactics will be done to check model efficacy in predicting business success over the end of working year. Above mentioned factors will be considered for model creation and execution for both sets of study (AI incorporated and non-incorporated sets).

Following is flow chart of possible methodology for our work.



4. Expected outcomes

Our work will be able to produce a good patent regarding novel model creation to distinguish between successful and flop business model with accurate prediction.

REFERENCES

[1]. Wåge, D. Crawford, G.E., Innovation in digital business models. In Proceedings of the 2017 XXVIII ISPIM Innovation Conference on Composing the Innovation Symphony, Vienna, Austria, 18–21 June 2017

[2]. Antonescu, M., (2018) Are business leaders prepared to handle the upcoming revolution in business artificial intelligence? Qual. Access Success 19, 15–19.

[3]. McCorduck, P. Machines Who Think: A Personal Inquiry into the History and Prospects of Artificial

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Intelligence; AK Peters/CRC Press: Boca Raton, FL, USA, 2009.
[4]. Economic Survey of India 2018-2019 (https://www.ibef.org/economy/economic-survey-2018-19)
[5]. Kaur, K., (2017) Startup India: Challenges & Opportunities.J. Soc. Sci. Res. 11(1), pp.2318-2321.
[6]. Ransbotham, S., Kiron, D., Gerbert, P. and Reeves, M., (2017) Reshaping business with artificial intelligence: Closing the gap between ambition and action. MIT Sloan Manag. Rev, 59(1).
[7]. Besold, T.R., Garcez, A.A., Bader, S., Bowman, H., Domingos, P., Hitzler, P., Kuehnberger, K.U., Lamb, L.C., Lowd, D., Lima, P.M.V., et al. Neural-Symbolic Learning and Reasoning: A Survey and Interpretation. Available online: https://arxiv.org/abs/1711.03902.
[8]. Vempati, S.S., (2016). India and the Artificial Intelligence Revolution. Carnegie Endowment for International Peace.
[9]. Das, S., Dey, A., Pal, A. and Roy, N., (2015) Applications of artificial intelligence in machine learning: review and prospect. Intel. J. Comp. App. 115(9).
[10]. Jain, S., (2016) Growth of startup ecosystems in India. IJAR, 2(12), pp.152-154.
[11]. Manshani, S. and Dubey, A., (2017) Startup Women in Startup India: A Study Of Women Entrepreneurs in India. Inter. J. of Bus. Manage. (IJBGM), pp.91-100.
[12]. Dinesh, K.K. and Sushil, (2019). Strategic innovation factors in startups: results of a cross-case analysis of Indian startups. J. Global Bus. Advance., 12(3), pp.449-470.
[13]. Srivastava, S.K., (2018). Artificial Intelligence: way forward for India. JISTEM-J. Inform. Sys. Tech. Manage. 15.
[14]. Javiya, V.B., (2018) Rise of Digital Healthcare in India with Special Reference to Artificial Intelligence. Dr.Vishal B. Javiya, International Journal of Research in Engineering, IT and Social Sciences, 08 (04); 69-72
[15]. Dwivedi, Y.K., Hughes, L., Ismagilova, E., Aarts, G., Coombs, C., Crick, T., Duan, Y., Dwivedi, R., Edwards, J., Eirug, A. and Galanos, V., (2019). Artificial Intelligence (AI): Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice and policy. Intel. J. Inform. Manage.
[16]. Liebowitz, J., (2001). Knowledge management and its link to artificial intelligence. Expert. Syst. Appl. 20(1), pp.1-6.
[17]. Relich, M., (2015) A computational intelligence approach to predicting new product success. In Proceedings of the 11th International Conference on Strategic Management and its Support by Information Systems (pp. 142-150).
[18]. Jha, K.N. and Chockalingam, C.T., (2009) Prediction of quality performance using artificial neural networks: Evidence from Indian construction projects. J. Adv. Manage. Res., 6(1),70-86.
[19]. Fernandez, F.G., Los Santos, I.S., Martinez, J.L., Izquierdo, S.I. and Redondo, F.L., (2013) Use of artificial neural networks to predict the business success or failure of start-up firms. Artificial neural networks-architecture and applications, pp.245-256.

List Ten Scopus/SCI indexed Journals (with publishers) related to the proposed topic.

S. N.	Name of Journal	Publisher	Total Cited	Journal Impact factor	Eigenfector score
1	Journal of International Business Studies	Academy of International Business	15,419	7.724	0.008030
2	Business Strategy and The Environment	1) SC Imago	5,266	6.381	0.00220
3	Journal of Business Venturing	Elsevier	12,076	6.333	0.00792
4	Journal of World Business	Elsevier	5,206	5.789	0.004820
5	Harvard Business Review	HARVARD	18,160	5.691	0.01308
6	Journal of Business Research	Elsevier	23,613	4.028	0.021330
7	International Small Business Journal-Researching Entrepreneurship	2) Scimago	2,961	3.706	0.00258
8	Artificial Intelligence Review	Springer	2,627	5.095	0.003290
9	Artificial Intelligence	Springer	9,362	4.483	0.00747

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