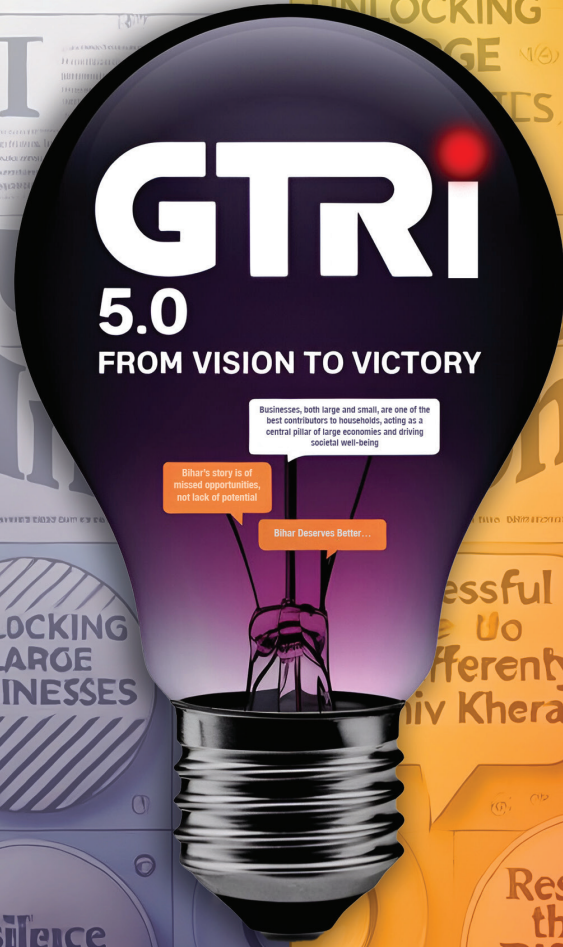


BIHAR JOURNAL

JOURNAL / EDITION 2.0



GTRI
5.0
FROM VISION TO VICTORY

Businesses, both large and small, are one of the best contributors to households, acting as a central pillar of large economies and driving societal well-being

Bihar's story is of missed opportunities, not lack of potential

Bihar Deserves Better...

UNLOCKING
LARGE
BUSINESSES

Resilience

Resilience
through
Differently
-Shiv Khera

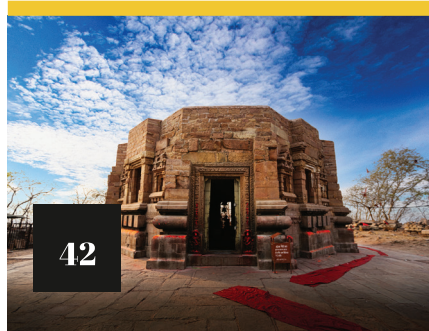


Resilience is empowering the vulnerable to rise stronger, breaking inequality, and building lasting equity

GTRI is a platform created under the aegis of AAMATYA FOUNDATION

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HOW CAN LOCAL BUSINESSES SURVIVE THE DIGITAL ONSLAUGHT



42

FROM VIHAR TO BIHAR: A LEGACY OF ENLIGHTENMENT AND A FUTURE TOURISM POWERHOUSE

Bihar, a name that resonates with the echoes of ancient wisdom, spiritual awakening, and cultural grandeur, is a land where history and modernity converge. From its origins as Vihar—a sanctuary for monks and scholars—to its evolution into Bihar, a state deeply rooted in knowledge, spirituality, and salvation, this region has been a cradle of civilization and enlightenment.

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DIALOGUE MOVED TO TINY STEPS FOR MORE DIALOGUES AND ACTIONS.

The G-dialogue platform has redefined Bihar's narrative, uniting diverse voices for meaningful debates and transformative actions. By blending heritage, innovation, and collaboration, it has fostered connections, inspired ventures, and showcased the potential of collective efforts for the state's progress.



EDITORIAL

The GTRi 5.0 Journal is a testament to Bihar's untapped potential and the collective efforts needed to unlock it. This edition delves into the state's socio-economic challenges, from the disproportionate impact of floods on women and children to the need for a shift from traditional career paths to innovation and entrepreneurship. It highlights the importance of digital transformation for local businesses and the role of startups in driving economic growth. The journal also critically examines Bihar's alcohol prohibition law, shedding light on its societal benefits and economic drawbacks. Through insightful articles, it calls for a balanced approach to development, emphasizing education, infrastructure, and cultural revival. The GTRi initiative, with its focus on dialogue and action, serves as a beacon of hope, fostering collaboration among diverse stakeholders. As Bihar stands at the crossroads of tradition and modernity, this journal inspires us to envision a future where the state's rich heritage and human capital converge to create a thriving, inclusive society

Aditi Nandan

CURATOR GTRI

Building Large Businesses from The Hinterlands for The World

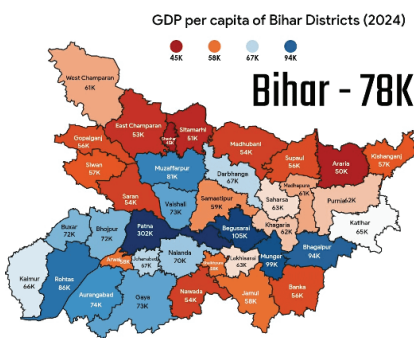
Aishwary Thakur
Investment Manager, JAFCO Asia

Bihar contributed 2.75% to India's GDP in fiscal 2022-23. Home to about nine percent of the Indian population, Bihar has the lowest GDP per capita among all the states and UTs in the country, at Rs 35,119. District-level analysis shows that the per capita income

large and small) turn out to be one of the best contributors to households in many ways.

Businesses are a central pillar of large economies. Historically, most large economies have had a strong share of revenue coming from private businesses and the business sector. The business sector contributes 72%-80% of value added across major OECD economies.

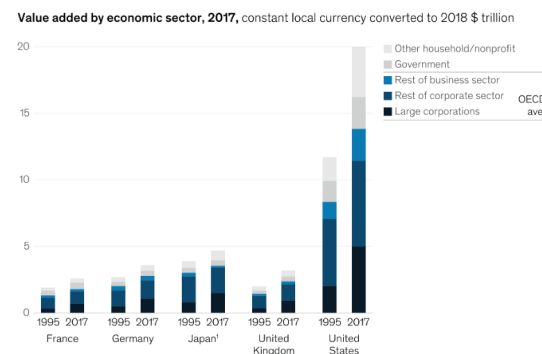
India's own GDP has seen total business sector participation of 88%, led by Karnataka. Bihar has been slow in this regard, especially when it comes to larger businesses.



of the state capital, Patna, is high, at Rs 131,064, compared to districts such as Sheohar, with a per capita income of a mere Rs 19,592.

Such conditions often stem from multiple supply and demand constraints and give rise to many more constraints. Although there are many ways to contribute to the overall well-being and development of society, businesses (both

The business sector contributes 72 percent of value added across major OECD economies.



McKinsey Global Institute[1] : Contribution of business sector to major economies

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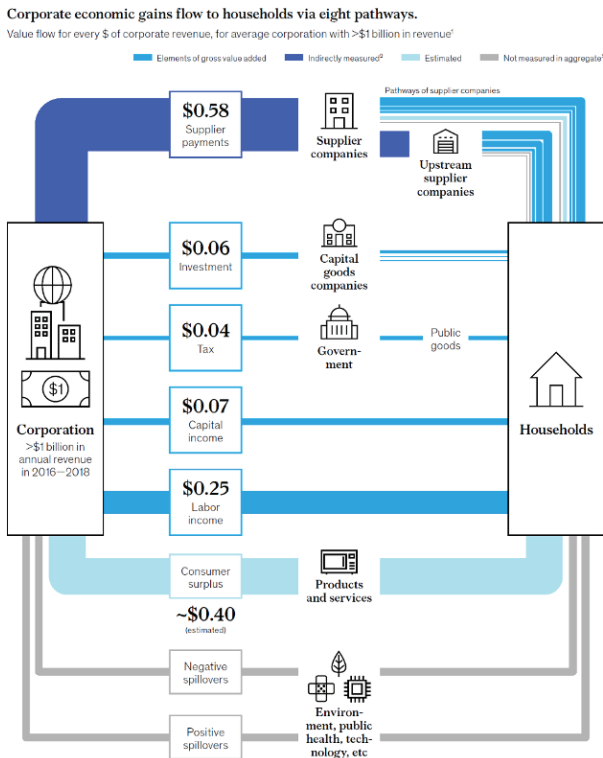
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46 DIALOGUE MOVED TO TINY STEPS FOR MORE DIALOGUES AND ACTIONS.

As per this chart by McKinsey & Co., capital is returned to households in 8 different ways, ranging from supplier payments to consumer surplus. Small businesses start with fewer ways in which they contribute to society, such as labor payments, but they do more as they grow. As a constrained society, one should be focused on giving prime importance to businesses and entrepreneurs in the hopes of large value creation. Creating large value via business in such supply and demand-constrained environments calls



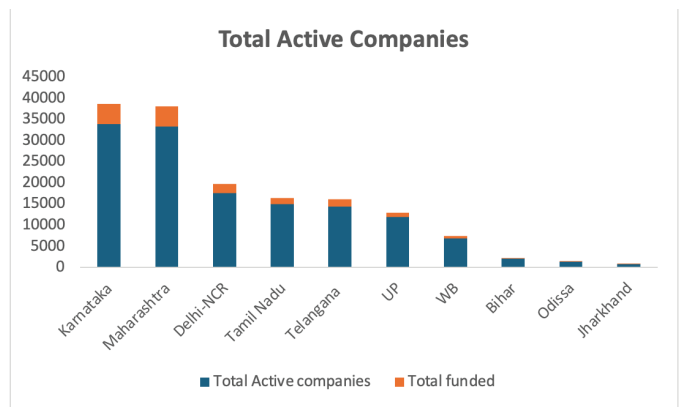
McKinsey Global Institute[1] : Contribution of large companies to households

for different challenges, starting as early as exposure to frameworks around the evaluation of business opportunities and value creation. This paper is an effort towards introducing some of the frameworks from a venture investor's perspective, and I hope that this paper will give new business owners and founders in the hinterlands a framework to create and evaluate business opportunities. I also hope that it might come in handy for policymakers while bridging the gap between the founders and the investors. In the current context of the world, multiple efforts have been made to improve bottom-up idea creation, identification, and filtration. Funds like YC often come up with annual lists centered around problems they are keen on investing in [2]. All these efforts, although great, seem to be more bottom-up, aimed at harnessing one's individual talents and transforming them into creatively solving large problems. These efforts are surely more organic and "problem-centric." Top-down approaches, on the other hand, are aimed at breaking down markets structurally and creating opportunities based on the gaps in the

structure. They tend to be more "opportunity-centric." While execution is best done in a "bottom-up" fashion, a top-down approach in business creation and evaluation has fundamental advantages in scarce markets with limits to what can be done. The scarcer a market, the better this ("top-down") approach becomes because it is easier to rule out consumption and arbitrage opportunities which will not scale as they are bounded by the market size.

We proceed forward in a top-down fashion mixed with some bottom-up pieces.

India currently has a total of 94 active unicorns and 340,127 active companies (non-MSMEs). Out of that, Bihar takes up 0.6%. Of the total pool of 22,738 funded companies, Bihar has 55 (0.2%)



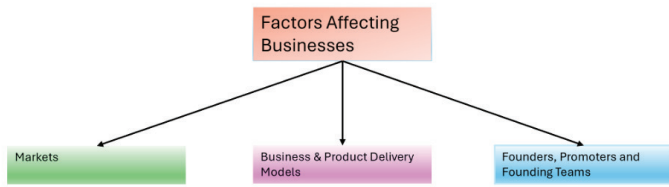
Bihar also has one of the lowest total company count and total funded company % at around 2.7%.

Region	Total Active companies	Total funded	Total Unicorn	% Funded
Karnataka	33939	4737	40	14.0%
Maharashtra	33405	4707	25	14.1%
Delhi-NCR	17560	2181	15	12.4%
Tamil Nadu	14887	1457	5	9.8%
Telangana	14373	1698	2	11.8%
UP	11965	1011	4	8.4%
WB	6871	508	0	7.4%
Bihar	2043	55	0	2.7%
Odissa	1381	156	0	11.3%
Jharkhand	714	34	0	4.8%
India	340127	22738	94	6.7%

This indicates that not only are there fewer companies in the state, but they are also not getting funded on average, which suggests that there might be a fundamental divide between deployable capital and the types of companies being funded.

At the end of the line, being a venture-funded scalable startup is not the 'be all end all' of businesses. SMEs and MSMEs hold as much importance, but venture-funded startups are great at capturing and transferring large value/exporting value in a short time span.

Getting venture capital funding is generally a function of many factors, but three major ones affect it the most: Founders & Team, Markets, and Business & Product Delivery Model. Most investors, when evaluating investment opportunities, have checklists that can be bucketed into these three major categories. We cover these three factors in detail.



Markets

Markets govern the scale of the business outcome.

The most important question to be asked here is “The What?”. What is the size and the growth rate of the sub-sector? Is it a large and growing sub-sector? Markets (Serviceable Obtainable Markets) with revenue potential of less than \$2B and small growth rates are generally very nascent and not the best for creating multi-billion-dollar enterprises (generally the outcome of institutional investors). Market opportunities can be analyzed in three steps:

Step 1: Break down the market into its individual pieces.

Step 2: Find underserved opportunities by figuring out mismatches.

Step 3: Study feasibility using frameworks.

Per Capita Income (USD)	Consumer Spending Behaviour
Below 1,000	- Focus on essential goods and necessities
	- Higher proportion of income spent on food and housing
	- More likely to trade down or reduce quantities purchased
	- Limited discretionary spending
1000-4000	- Gradual increase in discretionary spending
	- Still price-conscious, actively seeking promotions and deals
	- Increased use of buy now, pay later (BNPL) services
	- Slight increase in spending on personal care items

Step 1: Breakdown the market into its individual pieces

A foundational practice for structurally breaking down markets is to follow the trends of the most acceptable forms of social currencies – time and money. There are two major approaches that come to mind:

Macro approach –

Break the GDP into its individual components. In this approach, we are tracking the internal flow and flux of money in the economy. What this means is identifying one of two things:

- a) Are there any specific sub-sectors that are consistently locking up a large portion of the GDP (major shareholder in GDP)?
- b) Are there any sub-sectors seeing large inflows or outflows

identifying that the industrial sector has been growing due to large government-led capex investments and there’s an increased inflow of industrial equipment in the market.

Micro approach – Break each consumer’s wallet share (earnings) and timeshare (daily time spent) into its individual components to identify opportunities that are consistently locking up large portions of their wallet and time.

An example of this could be identifying that the youth of today is spending a lot of their time on social media.

Step 2: Find underserved opportunities by figuring out mismatches

Mismatches arise when there’s a difference or lag between supply and demand, and therefore, there are opportunities to exploit this difference/arbitrage.

These opportunities can be divided into three major types:



Domestic consumption opportunities, Arbitrage opportunities, and Hybrid opportunities. Domestic consumption opportunities are centered around domestic consumption and sub-sectors that have large or growing domestic consumption

of capital (major importer/exporter)?

An example of this could be

but not enough supply. An example of this could be identifying that the youth spend a lot of their time on social media, and the language they speak the most is their local mother tongue, yet there are very few vernacular social media applications catering to this demand.

Market arbitrage opportunities are centered around exploiting surplus and deficit within two markets, which means catering to foreign markets. This can be understood based on imports/exports. An example of this could be identifying that there’s a large foreign demand for a superfood that has a lot of local supply.

Hybrid opportunities are a mix of the above two. This generally means starting out small with domestic demand and expanding to other markets (with or without the same product), sometimes including both imports and exports to and from multiple geographies.

An example of this could be the identification of large fragmented supply chains in areas of significant domestic and foreign consumption.

Step 3: Study feasibility using frameworks

Next, we take a deeper look into the mismatches identified earlier to understand why these mismatches exist. This generally requires a lot of primary and secondary research. There are many ways to analyze a market, with Porter’s Five Forces being one of the popular frameworks.

A quick look at the Five Forces for market analysis tells us that there are five major forces governing the dynamics of a market. A market opportunity can be validated after these three steps:

Porter’s Five Forces Framework [5]

Markets tell us a great deal about how large a company can become, but it



eventually boils down to the details of

the business models.

Key Framework and Takeaway – Follow widely accepted social currencies: time and money.

It is best to think of markets and business models in conjunction. Regulatory arbitrage opportunities are great catalysts.

VC litmus test – Is the total market size larger than \$2B, and does it have the potential to be far bigger in the future?

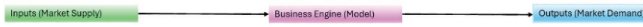
2. Business & Product Delivery Model

Once the markets have been finalized, focus should shift to the business model and the product that creates the most optimal amount of value. This can be done in three steps:

- Understanding the model-market fit based on inputs and outputs of the business.
- Understanding the business flywheel and its impact on RoCE and RoE.
- Understanding scalability and venture capital access for certain business models.

The most important question here is: “The how?”

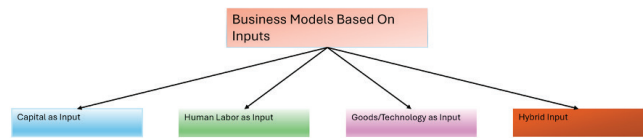
What is the best business model in the



market of choice to create and retain the most value?

Step 1: Understanding the model-market fit based on inputs and outputs of the business.

We are trying to match the quality of the supply in the market to the quality of the inputs required in the business. For exam-



ple, if a business requires a lot of capital as an input (e.g., lending companies) and there’s no supply of capital, it would be difficult to build this business.

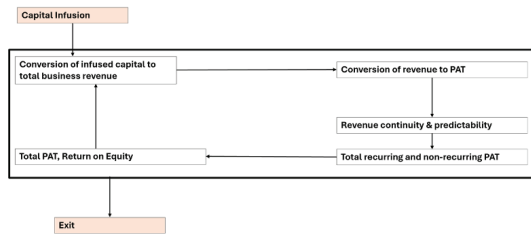
Businesses are preceded by the infrastructure they are built on and are therefore dependent on it. We are talking about physical infrastructure such as roads, railways, airports, waterways, power & petroleum, telecom, and urban development that impact the business, along with social

infrastructure (education and health) and industrial infrastructure.

Physical businesses require physical infrastructure, whereas digital businesses require digital infrastructure, which is more decentralized and democratically built globally with higher accessibility.

Step 2: Understanding the Business Flywheel and Its Impact on RoCE and RoE

Businesses are responsible for converting infused capital into revenue and converting that revenue into profit (profit after tax). Converting capital into revenue depends on the efficiency of the growth and



marketing function of the company, whereas the revenue-to-PAT journey depends on unit economics.

Revenue continuity and predictability are a function of the product and impact the lifetime value of the product.

These factors combined affect the Return on Equity (RoE) and Return on Capital Employed (RoCE).

RoE and RoCE are important factors in determining the success and overall valuation of the business.

Business models can be categorized into four major types, each having individual flywheels and intricacies.

These are: Makers, Marketplaces, Brands/Platforms, Services

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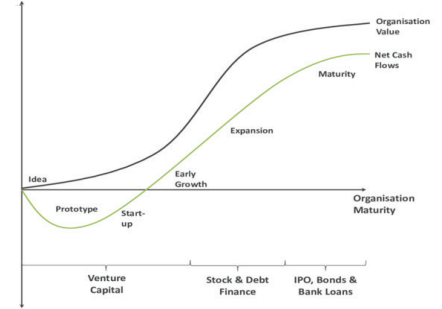
These are: Makers, Marketplaces, Brands/Platforms, Services

Services

Step 3: Understanding Scalability and Venture

Capital Access for Certain Business Models

Businesses often have to make a trade-off between having better profit pools early on and growing faster. Certain business models also have a higher chance of growing faster. Venture capital generally chases such business models, which follow a J-curve over an 8–10-year period.



ResearchGate[6]

The type of investments is broadly governed by basic VC mathematics.

Let’s take a \$100M VC fund. This fund generally reserves 60% of its capital for first cheques, which means \$60M is reserved for new deployment and \$40M for follow-on investment

To achieve a 17.5% IRR, the fund would have to 5x itself in 10 years. Assuming that the fund would roughly own 10% in its portfolio companies at the time of exit, this means

	Unit	Value
Fund size	\$M	100
Multiplier	#	5
Outcome	\$M	500
Years	Years	10
IRR	%	17.5%

the overall value of the portfolio at exit would need to be \$5B. The type of investments is broadly governed by basic VC mathematics.

	%	Number	Return/Co	Total Return(\$M)
Total Companies	100%	20		5000
Go to 0 in the process	40%	8	0	0
Get to \$50M-\$100M	50%	10	100	1000
Winners	10%	2	2000	4000

Let's take a \$100M VC fund. This fund generally reserves 60% of its capital for first cheques, which means \$60M is reserved for new deployment and \$40M for follow-on investments. To achieve a 17.5% IRR, the fund would have to 5x itself in 10 years. Assuming that the fund would roughly own 10% in its portfolio companies at the time of exit, this means the overall value of the portfolio at exit would need to be \$5B.

The power law of venture capital funds states that only 5–10 companies can return capital, and only 1–2 provide outsized returns. For example, a \$100M venture fund will only invest in you if they see you achieving a \$2B outcome. It is here that many businesses fail to show this promise. Another important point to keep in mind is that this scale needs to be achieved within 8–10 years.

Key Framework and Takeaway – The best businesses are built around risks, regulatory arbitrage, and execution.

VC Litmus Test – Does the business have the potential to hyperscale to large enough revenue and profit in 7–10 years?

3. Founders, Owners, Promoters

In my opinion, founders are the MOST important factor in determining the outcome (success or failure) of a business.

The most important question at this juncture is “The Why?” Given all the opportunities available, “why” is the founding team working on a particular opportunity? The answer often lies in a concept called founder-market fit (FMF).

Founder-Market Fit (FMF):

Some of the best companies have been built on unique insights acquired in the hinterlands. There's a unique arbitrage presented due to a fundamental lack of deep observability into the issues.

Both globally and locally, there have been cases of companies founded on the back of deep insights. For example:

- Infosys was started by NR Narayan Murthy and six other co-founders based on the fundamental insight of training and using the Indian talent pool to service demand in American markets. This is a classic case of understanding and exploiting market arbitrage.
- Innocent Drinks (acquired by Coca-Cola) was started by Richard Reed and his two co-founders when they identified a need for healthy, convenient drinks. This insight came while selling smoothies at music festivals—a strong indicator of being early to a trend and exploiting domestic demand.
- Dehaat, one of the largest agri-tech startups in the country, was started by founders with wisdom acquired in the hinterlands around farming practices.

Other examples include:

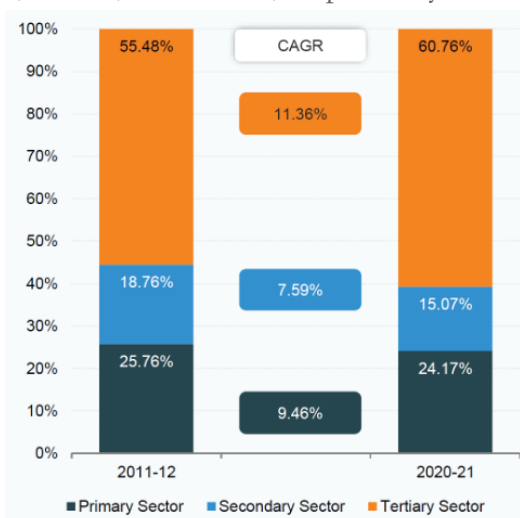
- Husk Power Systems (Maker business model around domestic consumption)
- Appointy (Service business model around market arbitrage)
- Arohan Foods (Brand business model around domestic consumption)
- Robosoft (Platform business opportunity around market arbitrage)

Key Framework and Takeaway – FMF often comes from either experiencing the problem firsthand or solving it in some setup prior to starting up, giving the founder a “unique” insight about the market and the pain points of the customer.

Some Ideas for Emerging Markets and Bihar

Emerging markets tend to differ in the sense that there's less competition. Hence, the focus should be on leveraging policy support to become large and global, as there are natural ceilings to the domestic consumption opportunity.

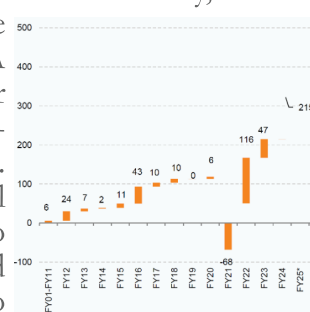
Having understood the nature of such markets, let's try to focus on the potential opportunities in Bihar. Bihar's GSDP is ~\$105B, primarily split across the primary, secondary, and tertiary sectors in a ratio of ~24%, ~15%, and ~61%, respectively.



IBEF: GSDP Split of Bihar

The total FDI inflow in the state has been close to \$215M between FY01-FY25. This is not a very large base that can be tapped to create a very large business.

It's important to note that while the agriculture sector employs the largest share of the workforce (47.8% in 2021-22), it contributes to a smaller proportion of the state's GSDP. Conversely, the tertiary sector contributes the largest share but employs a smaller proportion of the workforce (26.3% in 2021-22). There is a divide here that needs to be bridged. Trade and services seem to be the largest



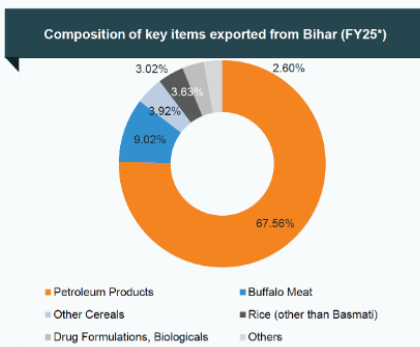
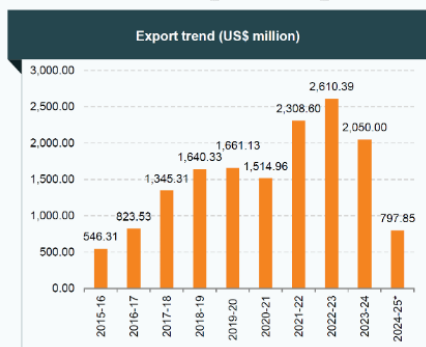
slice of the GDP, followed by Transport and Crops. These are all multi-billion-dollar opportunities with many players in them. Major tailwinds are being created in the travel sector because of an increased push toward tourism. New Capex and Real Estate

Here are examples of some companies that are trying to solve for the same. This is based on my personal understanding, and some of these

Sector	Subsector	Share of GSVA (%)	In USD (\$B)
Primary Sector (Agriculture)	Crops	9.9	10.2
	Livestock	6.6	6.8
	Fisheries	N/A*	
	Forestry and Logging	N/A*	
	Horticulture	N/A*	
Total Primary Sector		~20	20.6
Secondary Sector	Manufacturing	9.5	9.8
	Construction	N/A*	
	Mining and Quarrying	N/A*	
	Electricity, Gas, and Water Supply	N/A*	
Total Secondary Sector		~20.7	21.3
Tertiary Sector (Services)	Trade and Repair Services	15.8	16.3
	Transport, Storage, Communication & Services related to Broadcasting	10.7	11.0
	Real Estate, Ownership of Dwelling & Professional Services	9.4	9.7
	Financial Services	N/A*	
	Public Administration	N/A*	
	Other Services (including IT and ITES)	N/A*	
Total Tertiary Sector		~59.98	61.8

development are also bound to happen given large central budgets around improved physical infrastructure. The domestic market seems to be large enough but centered more around traditional

businesses might have changed their business models. Although great businesses can be built using any combination of markets and busi-



IBEF: Exports of Bihar

business models.

Let's look at exports next.

Exports have been increasing over the past few years and have reached close to \$2B. Apart from petroleum products, which are mostly coming from consolidated supply, the \$660M of non-petroleum products come from a fragmented base.

Madhubani paintings, Shahi Litchi of Muzaffarpur, Mithila's Makhana, Sujani of Sitamarhi, Sikki Arts, Bhagalpuri Silk, Katarni Rice, Jardalu Mango, Silav's Khaja, and Magahi Paan are famous non-petroleum exports of the state.

It is known that the infrastructure for exports in the state has not yet been developed. Neither has any Special Economic Zone (SEZ) been set up in the state so far, nor has the facility of custom clearance been made available to exporters.

There is not enough data on the total imports done by the state.

Let us now look at some potential opportunities by interweaving market opportunities and business models.

Business Model Example	Domestic Consumption	Market Arbitrage	Hybrid Models
Maker	Bringing cheap supply or high quality supply for an item of local consumption. Preferably with new regulatory easing.	Become a cheaper or higher quality supplier of high demand products in foreign markets	Becoming a player in the value chain of a product which is being exported, imported or domestically consumed
Marketplace	Creating a marketplace to cater to fragmented local demand. Solving for discovery and trust	Creating a marketplace to connect local supply with foreign demand	Becoming a platform to aggregate demand or supply in the entire domestic, import or export value chain
Brands/Platform	Creating a consumer or B2B brand focused around growing domestic consumption	Creating a consumer or B2B brand focused around primarily selling to foreign markets	Creating a domestic or b2b brand focused around growing exports, imports and domestic consumption
Service Providers	Creating Human-led or digital services for domestic consumption	Creating Human-led or digital services for foreign markets	Creating Human-led or digital services which are exported, imported or domestically consumed

ness models, some models are more attuned to venture capital. Marketplaces and brands focused on tapping local supply to cater to global demand seem to be the best in these cases.

Business Model Example	Domestic Consumption	Market Arbitrage	Hybrid Models
Maker	Sudha Dairy, Golden Ice Cream	Suresh Chips & SemiCon	Barauni Refinery, Riga Sugar Mills
Marketplace	Digital Labour Chowk	FreshShare	Dahaat
Brands/Platform	Sattu, Alankar Jewellers	Bhai Store, Madhubani Makhana, Amrapali Foods, Mithila Natural Systems	Eggor
Service Providers	RedBea, Aditya Vision, Aditya Consumer Mkt. Ltd. (HDF)	HiroLab, Magnetics, Infosystems	BlueMedia

Some Venture Fundable Models

Some Ideas for Emerging Markets and Bihar

Emerging markets tend to differ in the sense that there's less competition. Hence, the focus should be on leveraging policy support to become large and global, as there are natural ceilings to the domestic

Business Model Example	Domestic Consumption	Market Arbitrage	Hybrid Models
Maker			
Marketplace		☑	☑
Brands/Platform		☑	☑
Service Providers			

consumption opportunity.

Having understood the nature of such markets, let's try to focus on the potential opportunities in Bihar:

- **Gig work platforms:** Bridging the employment GVA divide can be done by building a platform for gig workers in the primary sector and the tertiary sector. This becomes a platform based on the market arbitrage opportunity.
- **Platform for management of NGO and CSR activities:** Given the amount of grant capital flowing into the state and its appetite for more, a software platform can be built to flow capital/value from large companies (CSR initiatives) to the state.
- **Agri marketplace:** Despite Dehaat being a market leader, there is still room for more players. Market-maker opportunities can be created in the sector as well as in other adjoining sectors like dairy, meat, and fish farming.
- **Brands from the state for the world:** There are many cuisines and local ingredients that are predominantly sold in the state, like Makhana, Litchi, as well as many local cuisines. Large brands can be creatively built around scarce commodities.
- **Warehousing & logistics as a service:** As more and more brands focus on reaching the last mile, a service agency or marketplace can be started by aggregating multiple other last-mile logistics and warehousing providers.

Once the right business opportunities have been validated, the founders should utilize resources at their disposal to move quickly and capture market share. The Bihar government has enabled this through multiple grants. Eligible startups can receive an interest-free loan of up to Rs.10 lakh for a period of 10 years. Businesses can use this initial capital to set up an initial PMF.

Once this step has been achieved, the next step is to evaluate the situation of the business and raise more equity capital. This is usually done via capital infusion for equity, but debt can also be used as an instrument. Based on the needs of the business, institutional investors (VC funds, angel syndicates, VD funds, etc.) should be approached, and the initiative should be taken global.

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Businesses, both large and small, are one of the best contributors to households, acting as a central pillar of large economies and driving societal well-being

Bihar's Path to Inclusive Growth: A Unique Model for a Unique State

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Introduction

Bihar, with its rich cultural heritage and intellectual legacy, has always been a land of immense potential. From the ancient universities of Nalanda to the freedom struggle, the state has played a pivotal role in shaping India's identity. However, decades of challenges in governance, infrastructure, and economic stagnation have left Bihar trailing behind other states in development metrics. Despite these setbacks, the essence of Bihar remains resilient. Its people, their intellect, and their cultural roots hold the key to transforming this state into a beacon of progress. As we envision a brighter future, it is imperative to recognize that Bihar's development model cannot be a mere replication of other states. Its unique challenges, strengths, and societal structures demand an indigenous and innovative approach to address its specific needs and aspirations. As Bihar is unique, so its problem and solution approach too need to be unique and specific. No model from any other state or nation can help it.

What Went Wrong: A Reflection on the Past

Bihar's historical decline can be traced back to a confluence of political instability, socio-economic challenges, and a lack of long-term planning. Post-independence, the state struggled to transition from its historically agrarian roots to an industrial economy, leaving its people reliant on migration for opportunities in other states. While the state consistently produced intellectual giants, top bureaucrats, and skilled professionals, the phenomenon of brain drain persisted. Biharis traded their intellect and labor for better opportunities in other states, contributing significantly to their development but leaving Bihar itself under-resourced. The socio-po-

Key Insights on Bihar's Challenges and Path Forward



Challenges in Education and Employment

- Despite prestigious institutions like IIT Patna, Bihar's broader educational infrastructure struggles with outdated curricula, underfunding, and high dropout rates.
- High unemployment rates and an underdeveloped private sector force skilled workers to migrate, creating a cycle of brain drain and limited local opportunities.



Startup Ecosystem and Entrepreneurship

- Bihar's entrepreneurial spirit is strong but constrained by limited financial resources, mentorship, and exposure to global markets.
- Initiatives like Startup Bihar and incubation centers are steps in the right direction, but more funding, role models, and societal support are needed to foster innovation.



Proposed Developmental Reforms

- Focus on modernizing education, promoting research, and tailoring vocational programs to local industries.
- Develop robust infrastructure, simplify bureaucratic processes, and encourage public-private partnerships.
- Revive cultural pride and promote a sense of belonging to attract investment and expertise back into the state.

litical landscape, marked by caste divisions and corruption, further hampered cohesive growth. For decades, infrastructure and industries stagnated, and the promise of potential was overshadowed by systemic inefficiencies. While the cultural pride of Biharis remained intact, the collective drive to invest in the state's future dwindled, creating a gap that must now be bridged.

Present Challenges: Education, Employment, and Startups

Education

Bihar's educational landscape is a paradox of excellence and inadequacy. While institutions like IIT Patna and a few others signal progress and serve as centers of excellence, the broader educational ecosystem struggles with outdated curricula, underfunded schools, and a dearth of skilled educators. The dropout rates in rural areas remain high, and many students seek higher education outside the state, exacerbating the brain drain. The lack of investment in digital infrastructure and research opportunities further hinders Bihar's ability to compete on a national and global scale. Bridging this gap requires a multi-pronged approach—upgrading infrastructure, empowering teachers, and aligning education with employable skills.

Employment and Migration

Bihar faces one of the highest unemployment rates in the country. The private sector remains underdeveloped, with limited opportunities for skilled workers. This forces a significant portion of the population to migrate to cities like Delhi, Mumbai, Kolkata, Bengaluru, and Hyderabad in search of work. Despite challenging civic conditions in these metropolises, Biharis excel, contributing significantly to their local economies. The

paradox lies in the fact that these same individuals, when given the right opportunities, could drive growth within Bihar. This exodus creates a cyclical problem: the lack of local opportunities drives migration, and migration drains the state of its most capable individuals, further limiting development.

Startup Ecosystem

The entrepreneurial spirit in Bihar is alive but constrained. Many young entrepreneurs operate from small homes in narrow streets, limited by financial constraints, inadequate mentorship, and a lack of exposure to global markets. Based on personal interactions with startup founders, a common theme emerges: they struggle to dream big and think expansively, often restricted by their immediate surroundings. Platforms like D2D Youthstory and other forums, including Startup Bihar Program and TiE Patna, have begun addressing this gap, but sustained support is needed to foster innovation. The startup ecosystem requires an infusion of mentorship, funding, and an encouraging societal mindset that views entrepreneurship as a respectable and viable career path.

Lessons from Other States and Cities (From Sumit's perspective)

During my recent visit to Hyderabad, I observed a city bustling with opportunities, housing global IT giants like Google and Meta. Despite its advanced infrastructure, Hyderabad grapples with big-city problems like traffic congestion and overstretched civic amenities. Interestingly, a significant portion of the workforce driving this IT-driven economic boom hails from other states, including Bihar.

Similarly, my experience in Mumbai during the recently conducted EPC Risk Management India Summit 2024 revealed an

unexpected respect for Bihar's workforce and budding entrepreneurs among business leaders and construction company leaders from Mumbai and Gujarat. They recognized the hard-working nature of Bihari laborers in cities like Surat and Jamnagar and equally admired the intellectual rigor of Bihari bureaucrats and professionals with startup mindsets for innovations. These insights underscore a crucial point: the same Bihari talent driving growth in other regions can be harnessed locally with the right policies, infrastructure, and cultural shifts. Needed Changes for an Indigenous Development Model



The same Bihari talent driving growth in other regions can be harnessed locally with the right policies, infrastructure, and cultural revival



Education Reforms

- Invest in upgrading school and college infrastructure with a focus on digital tools and modern pedagogy. The use of rightful content from YouTube and other social media platforms should be encouraged, with checks on brain rot caused by uncontrolled social media use.
- Introduce vocational training programs tailored to Bihar's unique industries, such as agriculture, crafts, and mid-scale manufacturing.
- Promote research and innovation by partnering with national and international institutions to create centers of excellence.

Startups and Entrepreneurship

- Establish state-sponsored mentorship programs that connect budding entrepreneurs with successful professionals, both within and outside Bihar. Small steps have been taken by startup cells of government engineering colleges and incubation centers, such as MIITIE and Darbhanga College of Engineering, as well as online platforms like BHASKAR (under the Startup India Program).
- Develop startup incubators and accelerators that address local challenges and leverage Bihar's cultural and natural resources.
- Encourage risk-taking and innovation by providing tax incentives, seed funding, and showcasing successful local ventures as role models.

Infrastructure Development

- Prioritize basic infrastructure improvements, including reliable power supply, internet connectivity, and efficient transportation networks.
- Simplify bureaucratic processes to attract investors and ease the setup of businesses.
- Promote public-private partnerships to fast-track infrastructure and industry projects.

Cultural and Social Revival

Reinforce pride in Bihari identity by promoting the use of the mother tongue and showcasing cultural heritage through festivals, arts, and cinema.

Foster a sense of belonging among local and migrant Biharis, encouraging them to invest their resources and expertise back into the state.



Bihar of Our Dreams

Seventeen years ago, while studying at NIT Patna, I (Sumit Kumar) envisioned a Bihar where education, innovation, and pride in one's roots formed the foundation of development. I wrote down my ideas in the form of an article in Manthan, a quarterly magazine published by Bihar Brains, wherein insights about the Global Bihar Meet were also discussed. Today, that vision has evolved, enriched by new insights and experiences. The Bihar of my dreams is a land where every child has access to world-class education, every entrepreneur has the resources to innovate, and every professional feels proud to contribute to their homeland. It is a state that harmonizes tradition with progress, leveraging its cultural strengths to carve a unique identity on the global stage.

“Successful people don't do different things; they do things differently.” — Shiv Khera

Bihar, too, must adopt this philosophy. By leveraging its unique strengths and embracing innovative approaches, it can transform itself into a thriving, inclusive, and self-reliant state.

Bridging the Gap: Nurturing Bihar's Youth for a Brighter Future (Harsh Rajput's perspective)

Bihar, my homeland, pulses with untapped potential. It's a land where resilience and ambition intertwine—a place where individuals have historically triumphed over limited resources to carve their own paths to success. From the corridors of power in Delhi to the bustling tech hubs of Bangalore and Hyderabad, Biharis



have indelibly marked India and the world. This inherent drive, however, often finds itself stifled within the state's own borders. To truly unlock Bihar's potential, we must shift our focus to nurturing its youth, fostering an environment where their talents can truly flourish.

As an 18-year-old entrepreneur born and raised in Bihar, I've intimately witnessed the intricate dance between challenges and opportunities that defines this land. Through my journey with D2D Youthstory, a startup I founded to empower youth in Tier 2 and Tier 3 colleges, I've gained invaluable insights into the aspirations and needs of Bihar's young generation. These experiences have solidified my belief that Bihar's future hinges on empowering its youth with the right resources, mindset, and opportunities.

The Paradox of Bihar's Potential: A Deeper Dive

Bihar's narrative is one of stark contrasts. It is a land that has gifted India with brilliant minds, from renowned mathematicians and scientists to influential politicians and civil servants. Yet, it grapples with socio-economic challenges that hinder its progress. This paradox underscores the urgent need for a targeted approach to youth development, one that recognizes and addresses the unique challenges and opportunities that exist in Bihar.

- **Brain Drain:** Bihar has consistently produced a wealth of intellectual capital, but a significant portion of this talent migrates to other states in search of better opportunities. This "brain drain" deprives Bihar of

the very individuals who could drive its growth and development.

- According to a study by the Institute for Human Development, Bihar has one of the highest rates of out-migration among Indian states, with a significant portion of migrants being skilled professionals and students seeking higher education.
- **Limited Private Sector Growth:** The private sector in Bihar remains underdeveloped, leading to a scarcity of job opportunities for skilled workers. This forces many young people to migrate in search of employment, further perpetuating the cycle of brain drain.
- Data from the Centre for Monitoring Indian Economy (CMIE) shows that Bihar's unemployment rate consistently ranks among the highest in India, highlighting the urgent need for private sector growth and job creation.
- **Socio-Economic Disparities:** Deep-rooted socio-economic disparities, coupled with inadequate infrastructure, create significant barriers to education and employment opportunities for many young people in Bihar.
- According to the NITI Aayog's Multidimensional Poverty Index (MPI), Bihar has the highest poverty rate among Indian states, with a significant proportion of the population lacking access to basic amenities like education, healthcare, and sanitation.

These challenges underscore the need for a multi-faceted approach to youth development in Bihar, one that addresses the root causes of these issues and creates an enabling environment for young people to thrive.

D2Dx: Youth Empowerment Program - A Ground Report

In 2024, we launched D2Dx, a youth empowerment program under D2D Youthstory. Our goal was to equip young people with the resources, connections, and opportunities they need to succeed. We conducted this program across 13 districts in Bihar, organizing workshops, seminars, and interactive sessions in various colleges. We reached over 2,500 students through these offline events, aiming to ignite their entrepreneurial spirit and broaden their horizons.

While the program had a positive impact, with many students expressing newfound enthusiasm and awareness, we also encountered some significant challenges:

1. **Limited Career Aspirations:** Many students were primarily focused on civil services or traditional jobs, unaware of the diverse career paths available in fields like startups, sports, and the arts. This limited awareness restricts their potential and hinders the growth of these sectors in Bihar.
 - For instance, during a session in a government engineering college in Jehanabad, we asked students about their career aspirations. Over 80% expressed their desire to pursue civil services or

- secure government jobs, with minimal interest in alternative career paths. This trend was consistent across most of the colleges we visited.
- 2. **Lack of Awareness:** A significant number of students were unfamiliar with professional platforms like LinkedIn and the importance of networking. This lack of awareness isolates them from valuable resources and connections that could significantly aid their career development.
 - In a survey conducted during our program, over 60% of the students admitted to not having a LinkedIn profile or understanding its significance in professional networking. This highlights the need for digital literacy and professional development programs to be integrated into the education system.
- 3. **Low Participation:** We faced challenges in generating enthusiasm and participation in our sessions, particularly in colleges located in rural areas. This indicated a lack of interest in exploring unconventional career options and a prevailing sense of complacency.
 - In a college in Bhagalpur, despite prior promotion and coordination with the college administration, less than 30% of the registered students attended our workshop on “Exploring Career Opportunities Beyond Traditional Jobs.” This low turnout suggests a need for more engaging and interactive programs that cater to the specific needs and interests of students in rural areas.

These observations highlighted a crucial need to create an environment that encourages exploration, innovation, and risk-taking among Bihar’s youth. We need to instill in them a belief that they can achieve success in diverse fields, beyond the conventional paths.

Fostering a Culture of Innovation: Learning from the IIT Ecosystem and Beyond

My journey has taken me to top IITs across India, including IIT Bombay, IIT Roorkee, IIT Kharagpur, IIT Delhi, and my own alma mater, IIT Patna. What sets these institutions apart is their vibrant environment that fosters a passion for exploration, innovation, and collaboration. The students there are not just focused on academics but are actively involved in research, projects, and extracurricular activities that broaden their horizons and nurture their entrepreneurial spirit.

This highlights the importance of:

- **Creating physical and virtual spaces for collaboration:** Where individuals can connect, share ideas, and access resources.
- **Promoting a culture of mentorship and peer learning:** Where experienced entrepreneurs and professionals guide and support aspiring innovators.

- **Facilitating access to funding and investment:** To enable startups to scale and grow.
- **Celebrating and showcasing success stories:** To inspire and motivate others.

To replicate these success stories and adapt them to the unique context of Bihar, we need to:

Establish R&D Labs: Creating accessible R&D labs in every district would provide students with the space and resources to experiment, build projects, and bring their ideas to life. These labs should be equipped with modern tools and technologies, and mentorship should be provided to guide students in their endeavors.

- **Imagine a network of “Innovation Hubs”** across Bihar, equipped with 3D printers, electronics labs, and software development tools, where students can tinker, experiment, and collaborate on projects. These hubs could be established in partnership with local colleges, universities, and industry partners.
- **Case Study:** The Fab Lab network, a global community of digital fabrication laboratories, provides a compelling example. By providing access to tools and technologies for digital fabrication, Fab Labs empower individuals to turn their ideas into reality. A similar network of labs in Bihar could spark grassroots innovation and entrepreneurship.

Promote Open Innovation Spaces: We need to create spaces where young people can freely explore, innovate, and collaborate on projects, fostering a culture of creativity and problem-solving. These spaces could be co-working spaces, maker spaces, or even community centers designed to encourage interaction and collaboration.

- **Visualize a “Bihar Innovation Network”** connecting these spaces, facilitating knowledge sharing and collaboration among students from different districts. This network could host regular events, workshops, and hackathons, bringing together students, mentors, and investors.
- **Data Point:** A study by the National Association of Software and Services Companies (NASSCOM) found that co-working spaces significantly contribute to the growth of the startup ecosystem by providing a collaborative environment, access to resources, and networking opportunities.



Empowering Bihar’s youth requires fostering innovation, enhancing education, and promoting digital literacy while leveraging the state’s rich cultural heritage. By creating collaborative spaces, mentorship programs, and exposure opportunities, and cultivating a growth mindset, we can transform Bihar into a hub of opportunity, entrepreneurship, and pride for the next generation.

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Organize Exposure Visits: Facilitating visits to major cities, IITs, and other innovative environments would broaden students' horizons and inspire them to aim higher. These visits should be designed to provide students with firsthand experiences of the possibilities that exist beyond their immediate surroundings.

- Imagine a program where groups of students from different colleges in Bihar are taken on “Inspiration Tours” to Bangalore, Hyderabad, and Delhi, visiting tech companies, research labs, and cultural centers. These tours could also include interactions with successful entrepreneurs and professionals from Bihar who have made their mark in these cities.

Provide Platforms for Expression: Open mic sessions, workshops, and mentorship programs would allow students to share their ideas, voice their concerns, and receive guidance from experienced professionals. These platforms would help build their confidence and provide them with valuable insights and support. DIAS Club and other budding startups are taking this initiative and reaching students across Bihar.

- A series of “Youth Dialogues” should be organized across Bihar, where students can interact with successful entrepreneurs, artists, and professionals from various fields. These dialogues could be themed around specific topics like innovation, leadership, and social impact.

Host Hackathons and Competitions: Regular hackathons and competitions would encourage students to develop their skills, collaborate with peers, and showcase their talents. These events would provide a platform for them to apply their knowledge, solve real-world problems, and gain recognition for

their achievements.

Imagine a “Bihar Innovation Challenge” held annually, where students from across the state compete to develop innovative solutions to local challenges in areas like agriculture, healthcare, and education. This challenge could be organized in partnership with government agencies, NGOs, and private sector companies.

Establishing a “Bihar Innovation Fund” to provide seed funding and support to winning teams and promising ideas that emerge from these hackathons and competitions.

Technology and AI: Catalysts for Change

Technology and AI have the potential to revolutionize Bihar's development. By integrating these tools into education, entrepreneurship, and governance, we can create a more inclusive and efficient ecosystem.

Personalized Learning: AI-powered platforms can provide personalized learning experiences tailored to each student's needs, improving educational outcomes and reducing dropout rates. These platforms can analyze students' learning patterns and provide customized content and feedback, ensuring that no one is left behind.

- Imagine a platform like “**Bihar Shiksha,**” an AI-powered learning platform that provides personalized learning paths for students across different subjects and grades, adapting to their individual needs and pace. This platform could also incorporate gamification and interactive elements to make learning more engaging.

Skill Development: Online courses and virtual labs can equip youth with in-demand skills, making them more employable in the modern economy. These resources can provide access to quality education

Bihar's story is of missed opportunities, not lack of potential



and training, regardless of geographical limitations, bridging the skill gap and preparing the youth for the jobs of the future.

- Envision a **“Bihar Skills Portal”** that offers a wide range of online courses and virtual labs in areas like data science, artificial intelligence, digital marketing, and web development, empowering youth with the skills they need to succeed in the digital economy. This portal could also provide career counseling and job placement services.

Data Point: According to a report by the World Economic Forum, AI is expected to create 97 million new jobs by 2025, highlighting the importance of equipping the youth with the skills needed to thrive in this evolving landscape.

Digital Literacy: Promoting digital literacy is crucial for empowering Bihar's youth to participate in the digital age and access online resources and opportunities. This includes providing access to computers and internet connectivity, as well as training on basic digital skills and online safety.

- A **“Digital Bihar”** initiative could aim to provide internet access to every village and town in Bihar, along with digital literacy training programs for all age groups, ensuring that no one is left behind in the digital revolution. This initiative could leverage existing infrastructure and partnerships with telecom companies to expand internet connectivity.
- Establishing **“Digital Literacy Centers”** in every district, equipped with computers and internet access, where individuals can receive training on basic digital skills, online safety, and how to access government services online.

Measuring the Impact: Data and Metrics

To effectively track the progress of these initiatives and ensure their effectiveness, it's crucial to establish clear metrics and data collection mechanisms. This will allow us to measure the impact of our efforts and make data-driven decisions to improve and refine our strategies.

Some key metrics to consider include:

Youth Unemployment Rate: Tracking the youth unemployment rate over time will provide insights into the effectiveness of job creation and skill development initiatives.

Startup Creation Rate: Monitoring the number of new startups being created in Bihar will indicate the success of entrepreneurship development programs.

Educational Attainment: Measuring the percentage of youth completing secondary and tertiary education will highlight the impact of educational reforms.

Digital Literacy Rate: Tracking the percentage of youth with access to and skills in using digital technologies will assess the effectiveness of digital literacy initiatives.

Social Mobility: Measuring the extent to which young people from disadvantaged backgrounds are able to improve their socio-economic status will indicate the inclusivity of development efforts.

The Role of Culture and Identity: Harnessing Bihar's Strengths

While infrastructure, technology, and economic opportunities are vital, we cannot overlook the importance of culture and identity in shaping Bihar's future. Bihar has a rich cultural heritage, a history of resilience, and a strong sense of community. These are invaluable assets that can be leveraged to foster a sense of pride, belonging, and collective responsibility among the youth.

- **Promoting Bihari Languages and Dialects:** Encouraging the use of Bihari languages and dialects in education and public spaces can strengthen cultural identity and foster pride in one's roots.
- **Showcasing Bihar's History and Heritage:** Educating the youth about Bihar's rich history and

Table: Key Metrics for Tracking Youth Development in Bihar

Current Status	Target	Source
25% (CMIE, 2024)	15% by 2030	CMIE, National Sample Survey Office (NSSO)
100 new startups per year	500 new startups per year by 2030	Department for Promotion of Industry and Internal Trade (DPIIT), Bihar Startup Cell
60%	80% by 2030	Unified District Information System for Education (UDISE)
40%	70% by 2030	National Statistical Office (NSO), Telecom Regulatory Authority of India (TRAI)
0.4 (on a scale of 0 to 1)	0.6 by 2030	NITI Aayog, Multidimensional Poverty Index (MPI)

By regularly monitoring these metrics and analyzing the data, we can gain valuable insights into the effectiveness of our interventions and make necessary adjustments to maximize our impact.

cultural heritage can instill a sense of belonging and inspire them to contribute to the state's legacy.

- **Celebrating Bihari Success Stories:** Highlighting the achievements of Biharis across various fields can inspire and motivate the youth to strive for excellence.
- **Fostering a Culture of Giving Back:** Encouraging the diaspora and successful Biharis to contribute to the state's development can create a virtuous cycle of growth and opportunity.

By nurturing a strong sense of cultural identity and pride, we can create a powerful force for positive change in Bihar.

Addressing the Mindset Challenge: Cultivating a Growth Mindset

Beyond infrastructure, resources, and opportunities, a crucial aspect of empowering Bihar's youth lies in addressing the mindset challenge. Many young people in Bihar, particularly those from disadvantaged backgrounds, may internalize limiting beliefs about their potential and opportunities. Cultivating a growth mindset—a belief that abilities and intel-

ligence can be developed through effort and learning—is essential for unlocking their true potential.

- **Promoting Positive Role Models:** Showcasing the stories of individuals who have overcome challenges and achieved success through hard work and perseverance can inspire and motivate the youth.
- **Encouraging Risk-Taking and Experimentation:** Creating a safe and supportive environment where young people can experiment, take risks, and learn from their failures is crucial for fostering innovation and entrepreneurship.
- **Building Self-Confidence:** Equipping young people with the skills and mindset to overcome challenges, bounce back from setbacks, and believe in their abilities is essential for their long-term success.
- **Fostering a Culture of Collaboration and Support:** Creating a sense of community and encouraging collaboration among young people can provide them with the support and encouragement they need to pursue their dreams.

By addressing the mindset challenge and cultivating a growth mindset, we can empower Bihar's youth to

believe in their potential, embrace challenges, and strive for excellence.

Conclusion: A Call to Action

The journey to transform Bihar into a land of opportunity and prosperity for its youth is a challenging yet achievable one. It requires a concerted effort from all stakeholders, a commitment to innovation and collaboration, and an unwavering belief in the potential of Bihar's young generation.

Let us, the people of Bihar, rise to this challenge. Let us invest in our youth, nurture their talents, and empower them to become the architects of a

brighter future for our beloved state. Let us create a Bihar where every young person has the opportunity to realize their dreams, contribute to society, and make their mark on the world.

This is a call to action, a call to invest in Bihar's future, a call to empower its youth, a call to build the Bihar of our dreams. Together, we can make it happen.

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Bihar Deserves Better...

Neeraj Jha

Former Group President & Chief Communications Officer, Bajaj Group, Bharti Airtel, HDFC Bank

The adorable Shri Aditi Nandan Ji reached out with a request to contribute an article for his magazine about Bihar, our beloved motherland. I felt both delighted and privileged at the opportunity. Yet, as I began reflecting on what to write, my joy gave way to sadness. What follows is the cry of a proud son lamenting the plight of his mother. I urge you to read this as a heartfelt, sincere, and objective assessment of what I see. My intent is not to demean or pontificate but to present an honest picture that I hope inspires change.

A Grim Reminder...

Only last week, I had my friend's 19-year-old son confiding in me how a classmate of his from Patna would tell others that he was from Uttar Pradesh. He feared being lampooned if he revealed his identity. This is not the first time I have heard such a story. "...but I have never lived in Bihar," is a common refrain many of us would have heard from fellow Biharis. Tragically, this includes those in exalted positions in government or in the private sector. This speaks volumes about our state's perception—not just externally but internally among its people.

Rajasthan: A Lesson in Transformation

Last month, I was in Rajasthan on a family vacation—in Jaisalmer, to be precise. The locals seemed to wear their pride on their sleeves, which was so heartening to see. While the state's remarkable transformation is evident, it's hard to say if their pride is the cause or the effect. Rajasthan, which was once part of the infamous BIMARU states, now wears a completely different look.

I first visited Rajasthan in the late 1970s when my family went to drop off my sister at Vanasthali Vidyapeeth. I still remember my mother's reaction upon seeing the mess' thaali—chapati and mirchi ka sabzi made up most of the meal. "This is what my daughter will eat?" she had exclaimed.

From those days to now, the state has come a long way. Rajasthan has turned its Jaisalmers into thriving tourist destinations, showcasing its culture with pride. Dishes like lal maans and dal bati churma now represent Rajasthan as much as its medieval forts. Five-star hotels dot even small towns like Jaisalmer. There is no major hotel brand—Indian or global—that is not present there. The state boasts excellent

road, rail, and air connectivity. Today, Jaisalmer has direct flights from cities like Delhi and Mumbai. Between tourism and ancillary businesses, the state has become a lucrative opportunity no one wants to miss out on.

Bihar: The Road Untaken

Juxtapose this with Bihar. Despite being one of the largest suppliers of bureaucrats—a fact we often crow about—we remain at the bottom on most development and economic parameters. This irony is both sad and frustrating. Sad because this is the only thing we have to brag about, and frustrating because the presence of top administrative talent has meant little for Bihar's well-being or public perception.

This observation isn't just data-driven—it's what I see and hear firsthand. You only need to drive through any state to assess its condition. The materials used for roofs, the vehicles parked in front of houses, and the number of people at tea or paan shops all tell a story that numbers don't. Bihar's roofs tell a story of a lack of economic activity. Is it any wonder, then, that we remain a bulk supplier of cheap labor to other states?

Untapped Potential

Bihar's potential is undeniable. Its rich history and cultural heritage could make it a global tourism magnet, much like Rajasthan or Kerala. Kerala wasn't always "God's Own Country." It took vision, investment, and clever branding to achieve that status.

Bihar is the land of Ashoka the Great, Mahavir, and Gautam Buddha. Yet Ashoka is better known in Sri Lanka than in his homeland. His empire, one of the most powerful of all time, was governed from Pataliputra—modern-day Patna. Between Pataliputra, Rajgir, Bodh Gaya, Pawapuri, and the ancient universities of Nalanda and Vikramshila, Bihar has enough to showcase to the world.

Dev (Anand) Saab saw this potential back in the 1970s, when he filmed *Johnny Mera Naam* in the Nalanda and Rajgir regions. The chairlift Hema Malini sat on in the film was the Rajgir ropeway—one of India's first, commissioned in 1969. Sadly, we failed to capitalize on this. Today, even this small historical achievement is largely forgotten. I am no expert on this, so won't hazard a guess as to why. Let the people who know better figure that out.

Films and Perception

As someone with expertise in brand building, I know that films are one of the most powerful PR tools. Think of what Aati Kya Khandala did for Khandala or how Bareilly's jhumkas became cultural icons. Globally, Dubai has used films and celebrities to promote itself, becoming a hub for tourism and investment. Abu Dhabi is following in its footsteps. States like Rajasthan and Kerala have done a better job of attracting tourists, while Bihar has failed. Worse, there seems to be no effort to do so. A simple check of flight connectivity or the number of hotels in Patna shows how far we have to go. Dubai, to my mind, remains the best example of brand and image building.

Conclusion

Bihar's story is not one of a lack of potential—it is a story of missed opportunities. With its rich heritage, cultural significance, and untapped resources, Bihar can reclaim its rightful place on the national and global stage. To achieve this, we need intent and investment. We must focus on developing infrastructure, improving connectivity, and marketing our state effectively. But most importantly, we need to believe in Bihar's story and wear our Bihari identity with pride. The past may have been glorious, but the future can be even brighter. It's time for us to stop lamenting and start building. Bihar deserves nothing less.

Disproportionate Impact of Floods on women and children: Lessons for Bihar

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According to the World Risk Report 2023, India is the third most vulnerable country out of 193 countries. Floods are the most common natural hazard in India, accounting for 47 percent of all natural catastrophes and causing an average of 1,700 deaths annually. Out of the total geographical area of 329 million hectares (mha), more than 40 mha is flood-prone. As per the Flood Affected Area Atlas of India (1998-2022) – Satellite-Based Study, India's top five flood-affected states are Bihar, Uttar Pradesh, Assam, West Bengal, and Odisha.

Bihar is one of India's most flood-prone states, with a sizable section of its population living under the constant threat of inundation. Nearly every year, floods occur in the state, with particularly severe floods in 2008, 2017, and 2024. The 2008 Kosi flood was one of the most devastating in recent history, displacing many people and causing extensive damage. The 2017 floods affected 19 out of 38 districts, impacting millions of people. In late September and early October 2024, heavy rainfall in Nepal and the release of water from barrages led to severe flooding in several districts of Bihar, affecting nearly 1.5 million people.

Even while floods impact all sections of society, women typically bear the brunt of the disaster's effects due to a combination of financial disparities, unequal power dynamics, and biological and physiological variances. Similarly, many studies (IPCC 2007, Peek 2008, and Kousky 2016) have found that

children are severely impacted by natural disasters, including floods. Women's sexual and reproductive health, gender-based violence, child abduction or sexual abuse, and basic needs such as food and shelter are just a few of the many challenges they confront because of their precarious social status. For marginalized sections, the impact is more severe for obvious reasons. Considering recurrent droughts, floods, severe weather conditions, or hardships in different parts of India, the development outcomes of women and children, particularly from small and marginalized communities, are unfavorably affected (UNICEF 2019).





Addressing the Vulnerabilities of Women and Children in Bihar's Flood Management

Floods in Bihar, fueled by its geographical vulnerabilities and erratic climatic changes, disproportionately impact women and children. Despite efforts like embankments and disaster programs, marginalized groups face heightened challenges, including health crises, gender-based violence, and limited evacuation resources. Traditional roles and societal disparities further hinder their resilience. Addressing these requires integrating gender-sensitive approaches, prioritizing hygiene, healthcare, and financial aid, while empowering women through participatory decision-making. Mobilizing JEEViKA cadres and community programs can enhance preparedness and recovery. Effective flood management in Bihar demands a holistic approach that recognizes the unique vulnerabilities of women and children, fostering sustainable and inclusive resilience.

Given women's heavily restricted roles, their dependence on men, and their confinement to domestic spaces, coupled with children's peculiar vulnerabilities, they hardly have any say in disaster risk reduction and management processes. This trend is prevalent across all flood-prone regions, and Bihar is no exception. Notably, more than 46 percent of Bihar's population falls under the age group of 0-18 years, and the state's children make up 11 percent of India's population. Therefore, their safety and well-being, along with that of women, must be prioritized during and after floods.

Key Factors Contributing to Floods in Bihar

Bihar is situated in the Gangetic plain, with several major rivers like the Ganga, Kosi, Gandak, and Bagmati flowing through it. These rivers originate in the Himalayas and carry large volumes of water, especially during the monsoon season. The monsoon season (June to September) brings heavy rainfall to the region, leading to increased river flow and overflowing banks. The Kosi River, also known as the "Sorrow of Bihar," is particularly notorious for its erratic course and frequent flooding. The river carries a large amount of silt, raising the riverbed and increasing flood risk.

While embankments have been constructed to control flooding, they have also been criticized for contributing to waterlogging and exacerbating the problem in some areas. Breaches in these embankments can lead to sudden and devastating floods. Changes in rainfall patterns and the increased frequency of extreme weather events due to climate change are likely to aggravate flood risks in Bihar.

Why are women and children more vulnerable?

Vulnerability refers to the inability of a person or community to foresee, manage, withstand, and recuperate from the effects of natural

or man-made calamities. While the consequences of a disaster are consistent, varying levels of exposure and differing opportunities lead to disparities in vulnerability. The increased risk of fatalities for women and children in floods is a deeply concerning reality, stemming from a complex interplay of several factors. It is crucial to understand that floods don't affect everyone equally. Women often face unique challenges and heightened vulnerabilities during and after these disasters.

In many societies, traditional gender roles place women in the position of primary caregivers for children, the elderly, and those with disabilities. This responsibility can delay their own evacuation or make it more difficult for them to move quickly to safety. Additionally, cultural norms regarding appropriate attire may restrict women's mobility in floodwaters, making it harder for them to swim or wade to safety. Traditional clothing, like saris, can become heavy and cumbersome in floodwaters, hindering women's ability to move quickly or swim. Furthermore, women may have less access to early warning systems, disaster preparedness information, and resources like transportation or financial means to evacuate. This lack of access can significantly hinder their ability to respond effectively to flood threats.

In some cases, physical differences also play a significant role. Women may have lower upper body strength or different centers of gravity, which can make it more challenging to navigate strong currents or climb to safety. Floods disrupt access to clean water and sanitation facilities, making it extremely difficult for women to manage their menstrual hygiene with dignity and safety. This can lead to infections and other health problems. The experience of a flood, coupled with the potential for violence and loss, can have a devastating impact on women's mental health, leading to anxiety, depression, and PTSD.



Resilience is empowering the vulnerable to rise stronger, breaking inequality and building lasting equity

While the interrelationships between gender, caste, and class affect society in India (Chakravarti 2003, cited in Madhuri 2016), inequality is produced and maintained by their entwining and linking (Sen 2005). In a disaster, Dalit women have been identified as one of the most vulnerable populations (NAOW 2006). The detrimental effects on lower-caste women after a disaster are exacerbated by the intersections of gendered identity with other cultural identities. For instance, lower-caste women are denied access to basic human rights since caste purity is valued even after a calamity. In addition to facing prejudice and discrimination based on caste, women also face inequalities in obtaining facilities for adequate sanitation, hygiene, and health. Though health is a serious concern for the whole community after a disaster, it poses greater risks to women due to biological or social restrictions. During the 1998 flood in Bangladesh, adolescent girls reported an increase in rashes and urinary tract infections because they were not able to properly wash and dry their menstrual rags (WHO, 2002). Adverse health outcomes include early pregnancy loss, premature delivery, stillbirths, delivery-related complications, and infertility. These problems are acute and enduring (UNHCR, 1999), but government and NGOs have largely neglected the specific needs of women.

In a 2021 study examining how inequality-adjusted human development (IHD) helps minimize male and female flood fatalities across 19 Indian states between

1983 and 2013, Bihar had the lowest IHDI (Inequality-adjusted Human Development Index) and the second-largest number of female deaths from floods. Kerala, with the highest IHDI, was found to have the lowest number of female deaths from floods. Attributing this to gender budgeting in Kerala, the study argues that when there is a higher expenditure on empowering women, they know how to access information and communicate with outsiders. Interestingly, Bihar and Kerala adopted gender budgeting practices in the same financial year, 2008–09. However, compared to 20 percent of Kerala's and neighboring Odisha's close to 40 percent or more budget allocation for the gender budget (IWWAGE, 2023), Bihar spends only 18 percent of its total annual budgetary allocations to meet the requirements of the gender budget, as per the Economic Survey of Bihar 2023–24. Considering Bihar's large population, the per capita spending is much lower. According to WHO (2002), "there is a pattern of gender differentiation and exclusion at all levels of the disaster process, i.e., exposure to risk, and livelihood following a calamity varies according to age." Moreover, households headed by women are especially susceptible to calamities. Despite Bihar being India's most flood-prone state, it has been reported that rehabilitation programs do not provide adequate relief material to women.

Participatory decision-making is also crucial for enhancing flood preparedness and management. A 2021 study examining the role of women and girls in community-based disaster risk management in Bangladesh indicates that their participation leads to positive outcomes, including saving more lives and reducing flood damage. Additionally, as the importance of the contributions made by women and girls during



disasters becomes more widely acknowledged, it will enable them to assert more agency and take on leadership roles in community decision-making processes. It is noteworthy that the state government has implemented many progressive legislations, including 50% reservation in local bodies and panchayats and 35% reservation for women in all government jobs in the last two decades. However, women's participation in decision-making, especially in terms of flood preparedness and related policies, is still far from desired in the state. More active engagement of the JEEViKA cadre can be a game-changer in this regard.

Coming to children, they are physically more vulnerable due to their smaller size, lower weight, and limited mobility. They can be easily swept away by floodwaters or struggle to keep their heads above water. Young children rely solely on their caregivers to keep them safe. Children are at greater risk if caregivers are unable to evacuate or become overwhelmed by the circumstances. Moreover, young children might not be completely aware of the risks posed by floods or know how to respond in an emergency. This lack of awareness can put them at greater risk.

Notably, these vulnerabilities often overlap and intersect. For example, a woman responsible for caring for multiple young children may face even greater challenges in evacuating quickly and safely. Similarly, children from marginalized communities may face additional barriers due to poverty, lack of access to resources, and discrimination. Even among women, those belonging to marginalized sections are more vulnerable due to their social positioning and lesser access to resources. In a heavily patriarchal and caste-ridden society like Bihar, these women and children face multiple forms of discrimination.

Key Statistics and Findings

- Studies have shown that women and girls are 14 times more likely to die in disasters than men (UN Women).
- In some flood events, the mortality rate for women has been significantly higher than for men, particularly in developing countries.
- Children, especially young children under the age of five, are consistently identified as a highly vulnerable group in flood disasters.
- An increase in IHDI minimized both male and female flood mortality in India; however, female mortality was not reduced as significantly as male mortality. This difference suggests that inequality in development has a differential impact on women.

Women's livelihoods, which often rely on agriculture, small businesses, or informal work, can be severely disrupted by floods, leading to economic hardship for themselves and their families. Women are frequently in charge of childcare and house-

hold duties, which are made even more difficult after a flood because of damage to homes and infrastructure. Floods can worsen already-existing power disparities and gender inequality by restricting women's access to resources and decision-making authority. After a flood, women may face stigma and social exclusion, especially if they have been victims of abuse or loss. It is critical to understand how these issues are related to one another and how they may worsen the situation for women. A gender-sensitive approach to disaster preparedness, response, and recovery that considers the unique needs and vulnerabilities of women is necessary to address these concerns.

Efforts to Mitigate Floods and Flood Preparedness

The state government has undertaken various measures to mitigate floods, including the construction of embankments, flood forecasting and warning systems, and disaster relief efforts. Community-based flood preparedness and disaster management programs are also being implemented. However, long-term solutions require a comprehensive approach that includes improved river management, land-use planning, and climate change adaptation strategies.

According to a report in the leading Hindi newspaper Hindustan (December 19, 2024), citing the 2024-25 Budget speech, Bihar

has been allocated Rs. 11,500 crores for flood control, barrage construction, and irrigation projects under the Accelerated Irrigation Benefit Programme (AIBP). Additionally, the state government has demanded Rs. 6,650 crores from the Centre for flood control.

Given that Bihar is a multi-disaster-prone state, the government has initiated several programs to create awareness about floods and other disasters at both the school and community levels. The Bihar State Disaster Management Authority (BSDMA) is continuously conducting extensive awareness and training exercises through its flagship programs, such as the Mukhyamantri School Safety Program (MSSP), Safe Swim, Safe Boat Operations, Community Volunteers (CVs), and disaster risk reduction (DRR) programs for differently-abled people. These efforts complement regular training programs for officers, veterinarians, engineers, architects, masons, JEEViKA Didis, and others across the state.

These efforts have undoubtedly resulted in greater awareness and improved flood management. Still, much remains to be done to protect vulnerable groups, particularly children and women, during disasters like floods. Helping women during floods requires a nuanced and sensitive approach that addresses their specific needs and vulnerabilities. Similarly, pragmatic solu-

tions are needed to address children's special needs, such as minimizing learning loss, securing nutritional needs, and preventing child trafficking.

Addressing Women's and Children's Specific Needs

During floods, women must have access to early warning information and evacuation routes. Transportation assistance, especially for women with children, elderly relatives, or disabilities, is crucial. Hygiene kits containing sanitary napkins, soap, clean underwear, and other essential items must also be prioritized. Clean water and food rations should be provided, with a focus on pregnant women, lactating mothers, and those with young children, alongside access to basic healthcare services, including reproductive health and prenatal care.

In the aftermath of floods, separate and secure spaces for women and children in shelters are essential to prevent gender-based violence and child trafficking. Adequate lighting and security measures in and around shelters should also be ensured. Psychosocial support and counseling services should be made available to help women and children cope with trauma and loss. Furthermore, access to clean and private sanitation facilities, including toilets and bathing areas, is a must. The distribution of menstrual hygiene products and information on safe hygiene practices is equally important. Clean water for drinking and washing must also be ensured for all.

Mobile health clinics are required to provide essential healthcare services, including reproductive health services, prenatal care, and treatment for injuries and illnesses. Addressing issues like human trafficking and supporting survivors of gender-based violence with safe spaces, legal assistance, and medical care is vital. Unfortunately, legal assistance and counseling are often overlooked.

Financial assistance or microloans should be made available to help women rebuild their livelihoods and businesses after floods. However, once shelters are disbanded, no support is typically provided. Vocational training and skills development programs can be conducted at flood shelters to help women find new employment opportunities, but this is seldom considered. After floods, women's access to land and resources for agriculture and other economic activities often decreases, adversely impacting their livelihoods.

Conclusion

Although Bihar has adopted several progressive policies and programs to address floods and flood management, there is a pressing need to focus on the specific needs of women and children in such policies. Involving women in planning and implementing relief and recovery efforts is critical. Coordination and collaboration with local organizations, government agencies, and other stakeholders are also essential to ensure effective and coordinated assistance. Notably, the largest and most efficient cadre of JEE-ViKA Didis, trained in DRR by BSDMA, should be actively engaged in addressing the specific needs of women and children during floods. Their extensive network can prove invaluable.

In short, providing long-term support for women's recovery and empowerment, including access to education, healthcare, and economic opportunities, is crucial. By addressing the specific needs and vulnerabilities of women during and after floods, we not only help them recover and rebuild their lives but also safeguard the future of their children. The flood situation in Bihar is a complex and recurring challenge that requires a focused approach and sustained efforts from the government, communities, and other stakeholders to mitigate its devastating impacts on women and children.



BEYOND GOVERNMENT JOBS: UNLOCKING BIHAR'S TRUE POTENTIAL



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Rethinking Bihar's Obsession with UPSC

Bihar's obsession with government jobs, particularly UPSC, limits its youth's potential, contributing to brain drain and stagnation. To foster socio-economic progress, Bihar needs a shift in focus, valuing diverse career paths and entrepreneurial innovation. Improved education, policy reforms, and societal support for unconventional careers can empower youth to explore global opportunities, reversing the state's reliance on government roles. Bihar's true potential lies in nurturing its talent beyond traditional career paths.

Bihar, a state rich in culture, history, and intellect, has long been the cradle of academic excellence. The state has produced countless bright minds who have achieved prominence in various fields, from ancient scholars like Chanakya to modern intellectuals excelling globally. Yet, a disturbing trend has gripped Bihar's youth—the relentless pursuit of government jobs, particularly through examinations like the Union Public Service Commission (UPSC). While these jobs hold undeniable value, the disproportionate emphasis on securing them is a detrimental obsession that stifles individual potential, fosters brain drain, and hinders Bihar's socio-economic progress.

The Cult of Government Jobs: A Critical Assessment

For decades, Indian Administrative Service (IAS) and Indian Police Service (IPS) officers have been elevated to the status of demigods in Indian society, particularly in Bihar. These positions, meant to be roles of service and governance, have been romanticized to an unhealthy extent. This societal adoration creates a skewed perception among youth that government jobs are the ultimate measure of success. However, it is vital to question the basis of such reverence. Civil servants' primary duty is to serve

citizens with integrity, accountability, and transparency. Yet, the reality is often marred by inefficiency, corruption, and a disconnect from ground realities—consciously, unconsciously, or subconsciously. This undue glorification perpetuates an unhealthy cycle where young individuals dedicate the prime years of their lives to preparing for exams, often neglecting alternative career paths. According to a report by the Department of Personnel and Training, the success rate for the UPSC Civil Services Examination is less than 0.2%. This means that out of the millions of aspirants, only a minuscule fraction secures the coveted spots. The rest are left grappling with wasted time, dwindling self-esteem, and a lack of direction.

The Cost of Lost Potential

The economic and intellectual costs of this obsession are staggering. Bihar, despite being one of the most populous states in India, lags in socio-economic indicators such as per capita income, industrialization, and literacy rates. A key contributor to this stagnation is the brain drain—a phenomenon where Bihar's brightest minds leave the state in search of better opportunities. According to a study by the Centre for Development Studies, nearly 37% of Bihar's skilled workforce

migrates to other states or countries. These individuals, often educated in Bihar's schools and colleges, contribute to the growth of other regions while Bihar's own development suffers.

Moreover, the lack of an entrepreneurial ecosystem exacerbates the issue. A NITI Aayog report highlights that Bihar's contribution to India's startup ecosystem is among the lowest in the country. Bihar's statistics from the Startup Ranking Framework 2020 weren't promising either, but the state has shown gradual progress in the 2024 framework and has been recognized as an 'Aspiring Leader.' Bihar does not—and has never!—lacked talent but rather carries a blurred vision and insufficient encouragement to think beyond traditional career paths. Youngsters who could be pioneering innovative solutions or starting businesses often get trapped in the monotony of government job preparation.

The Role of Casteism, Caste Politics, and Corruption

Bihar's socio-economic progress has also been hindered by deeply entrenched casteism, caste politics, and systemic corruption. The caste system, while legally abolished, continues to influence social dynamics, access to opportunities, and political decisions. Many government policies and schemes are shaped by caste-based considerations, often at the expense of merit and efficiency.

Political leaders frequently exploit caste identities to consolidate vote banks, diverting attention from pressing developmental needs such as education, infrastructure, and employment generation. This perpetuates a cycle of inequality, where certain communities remain deprived of opportunities while others benefit from entrenched power structures.

Corruption further compounds these issues. Bihar remains one of the states most affected by corrupt practices, ranging from bribes in public services to embezzlement of funds meant for welfare schemes. These issues not only erode public trust but also divert resources away from critical developmental initiatives.

Addressing casteism, caste politics, and corruption requires bold policy reforms, transparency, and a commitment to merit-based governance. Only then can Bihar create an environment where every individual, regardless of their background, has equal opportunities to thrive.

Shifting Focus: Respecting All Professions

A critical shift in societal attitudes is essential. Society must move away from the narrow perspective that equates success solely with government jobs. It is imperative to create an environment where individuals in diverse professions are valued and respected. Parents, educators, and peers must avoid looking down on those who choose alternative career paths



and instead celebrate their contributions. From entrepreneurs and artists to scientists and skilled workers, every profession has its own significance and potential to drive progress and contribute to the growth of the nation.

By respecting and encouraging varied career choices, society can relieve the immense pressure placed on young individuals to conform to a singular definition of success. This will not only boost morale but also enable more people to pursue careers aligned with their passions and strengths, leading to better outcomes both for individuals and for Bihar as a whole.

Education: The Root Cause and the Remedy

The quality of education in Bihar plays a pivotal role in shaping the aspirations of its youth. Despite improvements in recent years, the state's education system faces significant challenges, including inadequate infrastructure, outdated curricula, and a dearth of qualified teachers. While I am hopeful that things will start to change for the better, I was stoked to learn that over 50% of students in Bihar's rural schools cannot perform basic arithmetic or read at grade level. The statistics are documented in the latest report by the Annual Status of Education Report (Rural), 2022. Such a lack of foundational skills limits students' ability to compete in diverse fields and confines their career aspirations to a narrow spectrum.

Improving the quality of education is crucial for creating a workforce equipped to meet the demands of a rapidly changing world. Introducing modern teaching methods, enhancing teacher training pro-

grams, and investing in digital infrastructure can bridge the gap. Additionally, fostering critical thinking, creativity, and problem-solving skills from an early age can empower students to envision a future beyond government jobs.

Policy Changes to Foster Entrepreneurship and Innovation

Bihar urgently needs targeted policy changes and incentives to promote entrepreneurship and drive economic prosperity. Policymakers must introduce schemes that encourage individuals to start new ventures by providing financial support, tax benefits, and access to affordable infrastructure. Initiatives like startup incubators, mentorship programs, and skill development workshops can equip budding entrepreneurs with the tools they need to succeed.

In addition, the government should prioritise the creation of industrial zones, innovation hubs, and technology parks within the state. These measures would not only generate employment but also contribute to Bihar's revenue generation, ensuring sustainable development. By fostering a robust entrepreneurial ecosystem, Bihar can retain its talented workforce and become a thriving economic hub.

Bihar Needs New Heroes

To inspire the next generation, Bihar must spotlight individuals who have charted unconventional paths and achieved remarkable success. These new heroes, be they entrepreneurs, scientists, artists, or social activists, serve as living proof that excellence is not confined to government jobs.

Highlighting stories of trailblazers can motivate youth to explore diverse avenues. Media, educational institutions, and community forums must work together to showcase these role

models and emphasise the value of innovation, perseverance, and sometimes the need for risk-taking appetite.

By celebrating such achievers, Bihar can challenge the outdated notion that success is synonymous with chosen few avenues. These role models can ignite a cultural shift, encouraging youth to dream bigger and contribute meaningfully to their communities and the overall welfare of Bihar.

The Need for an Entrepreneurial Mindset

Entrepreneurship has the potential to transform Bihar's economic landscape. The state is rich in natural resources, agricultural potential, and cultural heritage—all of which can be leveraged to create sustainable businesses. However, fostering an entrepreneurial mindset requires a shift in societal attitudes. Parents, educators, and policymakers must encourage risk-taking and innovation rather than promoting safe, conventional career choices.

Additionally, several government initiatives like the Startup India from the centre and the Bihar Startup Policy from the Government of Bihar and programs by organizations like the Indian Angel Network can provide financial and mentorship support to budding entrepreneurs from Bihar. However, the success of these initiatives depends on widespread awareness and participation.

Beyond the UPSC: Exploring Alternative Pathways

It is high time that Bihar's youth broadened their horizons and explored alternative career pathways. Fields like technology, healthcare, education, arts, and sports offer immense potential for growth and fulfillment. The rise of digital platforms and remote work has made it easier than ever to access global opportunities from any corner

of the world.

Moreover, aspiring individuals must aim for coveted scholarships such as the Chevening Scholarship and Fellowships, Rhodes Scholarship, or Fulbright Fellowships. These prestigious programs not only provide world-class education but also open doors to global networks and opportunities. Pursuing such scholarships can equip Bihar's youth with the skills and exposure needed to bring transformative change back to their homeland. However, such scholarships are extremely tough to crack, with an acceptance rate of 0.5-1%. Hence, information about such opportunities must be brought to the fore and discussed extensively in the mainstream.

Moreover, vocational training and skill development programs can provide viable career options for those who may not wish to pursue traditional academic routes. According to the National Skill Development Corporation (NSDC), industries like manufacturing, logistics, and hospitality are poised for significant growth and require skilled professionals.

The Role of Society and Policy

Creating a paradigm shift requires collective effort. Society must shed its obsession with government jobs



and redefine success as achieving one's full potential, regardless of the field. Media, too, plays a critical role in shaping public opinion and should focus on highlighting diverse success stories rather than glorifying a select few.

Policymakers must prioritise investments in education, infrastructure, and entrepreneurship. Providing access to quality education, offering incentives for startups, and creating job opportunities within Bihar can reduce the state's dependence on government jobs and curtail brain drain.

In particular, policies need to address systemic issues like caste-based inequities and corruption, which have long stymied Bihar's growth. Transparent governance, merit-based systems, and a focus on inclusivity can create a level playing field for all citizens, ensuring that no talent is left untapped due to social or economic barriers.

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A Call for Change

Bihar's youth are its greatest asset, brimming with intelligence, resilience, and potential. However, their fixation on UPSC and government jobs is a disservice to themselves and the state. By broadening their aspirations, embracing innovation, and leveraging their unique talents, they can transform Bihar into a hub of progress and opportunity.

It is time for Bihar to reclaim its legacy as a land of visionaries and trailblazers. This requires a collective effort from individuals, families, educators, and policymakers to create an environment where every young person feels empowered to dream big and pursue their passion. Only then can Bihar achieve its true potential and take its rightful place as a leader in India's growth story.

ECONOMIC IMPACTS OF NATURAL DISASTERS & DISASTER MANAGEMENT: - A CASE STUDY OF FLOOD IN BIHAR WITH A GLOBAL PERSPECTIVE

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Abstract

This study examines the economic impacts of natural disasters, focusing on Bihar, India, while providing a global perspective. Natural disasters impose profound economic repercussions, disrupting communities, infrastructure, and economies worldwide. Using secondary verified sources, this research analyzes the recurring floods in Bihar, which affect nearly 73% of the state's land area. Structural measures such as embankments, levees, and flood walls are widely employed for flood control but often prove inadequate. To address these challenges, this study emphasizes integrating structural solutions with non-structural strategies, including floodplain management, building regulations, and flow management policies. These approaches enable effective management of flood-prone areas and reduce long-term damages. Key findings underscore that recurring floods result in significant economic losses, necessitating a proactive and balanced approach to disaster management. The study advocates incorpo-

rating disaster risk reduction strategies into development planning to enhance resilience and promote sustainable development. These findings contribute to a broader understanding of disaster management by offering actionable insights into mitigating the economic impacts of natural disasters globally.

Keywords: Natural disasters, Economic impact, Bihar floods, Disaster management, Floodplain management, Resilience.

Introduction

Human progress has historically been inextricably linked to its connection with nature. In the modern period, economic development is a key indicator of progress. As a result, nations have engaged in strong competition to achieve economic advancement. While some countries are fortunate to have landscapes that support their growth, others face the formidable struggle of nature's hostility. As the global effects of natural calamities become increasingly severe, the human and economic impacts of



natural disasters are also escalating. Disasters such as earthquakes, storms, floods, and droughts result in approximately 40,000 to 50,000 fatalities annually worldwide.

Natural disasters often have devastating economic impacts, particularly in low-income countries, where recovery poses significant challenges. In 2023, global economic losses from such events were approximately \$380 billion. India, prone to frequent disasters, has faced severe economic repercussions recently. The 2013 Uttarakhand floods, triggered by intense rainfall, caused over 5,700 fatalities and damages estimated at Rs.12,000 crores (about \$2 billion). Similarly, the 2014 Jammu and Kashmir floods resulted in over 200 deaths and economic losses of Rs. 5,000 crores (around \$800 million).

These incidents highlight the immense human and financial toll of natural disasters, emphasizing the need for robust disaster preparedness and recovery strategies. To mitigate disaster impacts, innovations like early warning systems and improved infrastructure are needed. Climate change increases extreme weather risks, enhancing resilience. Preparation measures and support for vulnerable populations are crucial. Organizations

like the World Bank, GFDRR, IDA, and NDMa help assess risks and promote proactive strategies.

Objectives

- Analyze the socioeconomic impacts of natural disasters on emerging economies worldwide, focusing on key sectors and vulnerabilities.
- Evaluate disaster management strategies used globally to overcome the challenges posed by natural disasters.
- Examine the measures and steps Bihar has taken over the years to address socio-economic losses due to natural disasters such as floods, droughts, and other calamities.
- Incorporate global best prac-

ary data from government reports, international organizations, and academic journals to quantify economic impacts. Thematic analysis examines the effectiveness of both structural and non-structural strategies, particularly in Bihar. The study suggests an integrated disaster management framework, incorporating community preparedness, building regulations, and flow management policies, to enhance disaster resilience and provide actionable recommendations for effective management strategies. The findings offer valuable insights for flood management strategies.

Case Study of Bihar

Bihar Hazard Profile:

Bihar, a rural state, faces frequent natural and human-induced disasters due to its geo-climatic conditions. Major natural disasters include floods, droughts, earthquakes, and cyclones, while human-induced risks include road accidents and epidemics. Floods affect 73% of Bihar's land, and the state is in a high-risk seismic zone. The BSDMA is implementing measures to build disaster resilience, shifting from reactive to proactive risk reduction strategies.

Impact of Flood on Socio-economic Growth:

Flooding is a significant issue in India, causing extensive damage to

Natural disasters demand proactive strategies for sustainable development and resilience

tices to propose a comprehensive and sustainable disaster management framework for Bihar.

Research Methodology

This study uses qualitative thematic analysis and quantitative statistical evaluation to understand flood impacts. It relies on second-



lives, property, livelihoods, infrastructure, and public services. The northern region of Bihar, home to 76% of the state's population, is one of the most flood-prone areas, accounting for 16.5% of flood-affected areas and 22.1% of its flood-affected population.

Cause of Flood in Bihar:

North Bihar, prone to flooding due to its northern plains, is impacted by major rivers and smaller ones from Nepal's Himalayas. Deforestation has worsened the issue, causing soil erosion and increased sediment loads in rivers. Floods cause loss of lives, livestock, and livelihoods, affecting up to 50% of India's total flood-related damages.

Socio & Economic Impacts:

Flooding in Bihar severely affects agriculture and livelihoods, causing direct losses in lives and property, as well as health issues and economic vulnerability. It displaces millions and strains healthcare systems, significantly impacting the state's economy.

Impacts of Flood on the Overall Growth of Bihar:

Bihar is a state in India, where the economy mainly relies on farming and related activities. However, agriculture makes up only 21% of Bihar's NSDP, which is much lower than the national average contribution of agriculture to the country's GDP, which is 29.33% (Central Statistical Organisation, Govt. of India, 2014).

Flood Management in Bihar

Proper flood management is crucial for reducing the impacts of flooding and promoting sustainable growth, focusing on minimizing damage and maximizing benefits, protecting agriculture, and supporting long-term development.

Structural Measures

Flood Embankments Construction

Bihar's flood management strategy involves building and maintaining embankments, which are popular due to their affordability and speed. As of 2013, 3,732 km had been constructed, with an additional 1,555 km under construction (WRD, Govt. of Bihar, 2014).

Channel Improvements

The embankments in Bihar are under pressure due to rising riverbed levels from Nepal's upstream catchment areas. The Gandak River's bed level has risen by 1.8 meters in the past 30 years. A more effective solution is to dredge and de-silt rivers to improve their natural flow, but this approach is not widely adopted due to high costs and practical challenges.

Embankment Protection Works

Embankment protection is divided into two main activities:

- Anti-erosion Works

During the flood season, activities involve repairing and strengthening embankments, addressing damage from previous seasons, and adding new protective structures like spurs, aprons, or flood levees.

- Flood-fighting Works

Emergency actions are taken during flood periods to protect dams from breaches or damage due to rising river levels.

Non-Structural Measures

An integrated approach, combining both structural and non-structural measures, is crucial for effective flood management. While structural measures like embankments can mitigate floods, they cannot fully solve the problem. Key non-structural measures include constructing dams and implementing flood prevention measures.

Some Key Non-Structural Measures:

- Land Use Planning

Flood-prone areas need careful land use planning for parks, ecological reserves, and recreation. Riverside land can serve these purposes, with flood-resistant facilities like restrooms and picnic areas.

- Zoning of Flood-prone Lands

Zoning effectively manages flood-prone areas by restricting development and defining suitable uses, while remaining adaptable to accommodate varied land uses like agriculture, open spaces, or parks.

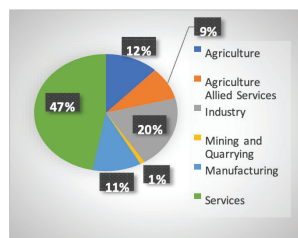
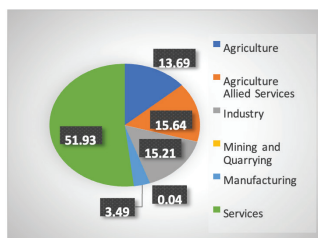


Chart - (a) Share of various sectors in India's GDP (Source: Directorate of Statistics and Economics, Bihar)

Around 78% of Bihar's population engages in farming or related activities, with 73% being small and marginal farmers. The state's sustainable development relies on the growth of its agricultural sector. Small farmers often take loans from local dealers but fail to repay, leading to crop failures and forced migration. This cycle reduces agricultural production and negatively impacts the state's economy, especially in flood-prone areas.

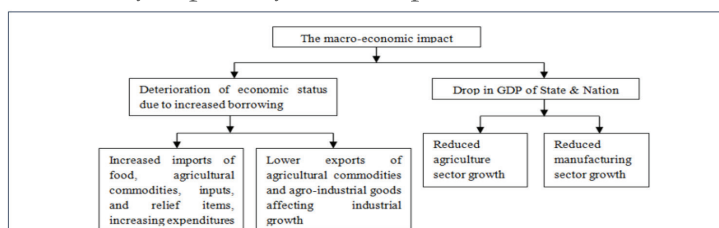


Fig 1. Economic impact of poor agriculture growth (Source: -Impact of flood and its management- a case study of Bihar)

Flood Disasters as Opportunities for Corrective Planning

Flood disasters offer a chance to rectify historical planning errors and implement sustainable land-use strategies, such as removing flood-prone developments and converting them into restricted zones.

Compensation and Incentive Structures

After floods, compensation mechanisms aim to help victims restore their livelihoods. Flood compensation funds can be used for enhancing infrastructure resilience, acquiring high-risk properties for relocation, and supporting affected communities.

Flood Insurance as a Risk Mitigation Tool

Flood insurance distributes financial losses, reducing the economic burden on affected individuals. Awareness campaigns, policymakers, and programs like Pradhan Mantri Fasal Bima Yojana highlight its importance in disaster preparedness.

Silt Management and Watershed Policies

Silt buildup in the Kosi River

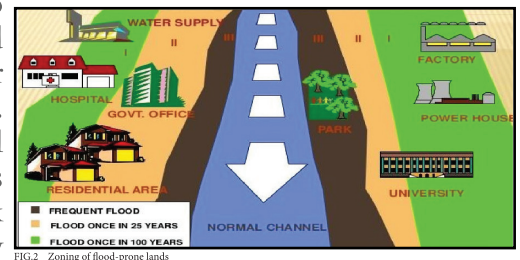
necessitates integrated watershed management to reduce flood risks. Natural disasters, worsened by climate change, demand effective disaster management strategies. Bihar's frequent floods illustrate these challenges, causing extensive damage and disproportionately affecting marginalized communities.

Conclusion

Natural disasters, such as floods, hurricanes, and earthquakes, have significant impacts on economies and communities worldwide. The increasing frequency and severity of these events, often linked to climate change, have prompted countries to develop better disaster management strategies. Successful international examples include countries focusing on proactive risk assessments, community engagement, early warning systems, and integrated response strategies. These approaches help mitigate damage and improve recovery times, highlighting the importance of global cooperation and sharing best practices in managing disasters.

In India, disaster management is a critical issue, with the government

implementing both structural and non-structural measures such as building embankments, improving early warning systems, and fostering community preparedness. However, challenges remain in building resilience and ensuring that disaster management strategies extend beyond immediate relief efforts to focus on long-term solutions. Adopting successful global practices could strengthen India's ability to manage these challenges more effectively. Bihar, one of India's most flood-prone states, is one of the most



flood-prone areas, with 28 of its 38 districts considered flood-prone. Despite structural measures like embankments, repeated flooding continues to impact small farmers and rural communities, leading to severe economic hardships. A balanced approach combining local solutions with global best practices is needed to better manage natural disasters.

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How Can Local Businesses Survive the *Digital Onslaught*

Aditya Vaibhav
Editor, *The TrickyScribe*

The advent of app-based services has significantly impacted the way businesses in Bihar and Jharkhand operate, with a notable effect on the unorganised sector. Those relying on traditional advertising methods have been among the worst hit.

Notably, most of these businesses spend a lot on mainstream advertising on a regular basis to ensure brand presence. Still, brand presence doesn't effectively translate into business leads.

For many local businesses in these regions, the typical approach to advertising has focused on creating visibility through traditional media like newspapers, radio, and local television.

While these methods have their value, they lack the crucial component of lead tracking and measurable outcomes. Local businesses often have a set advertising budget, but they are not always aware of how much of that spend actually generates meaningful business leads.

This lack of insight into lead generation and return on investment (ROI)

limits growth potential besides direct and trackable results.

With platforms like Amazon, Big-Basket, Swiggy, Zomato, and others providing easy access to a wider inventory of products and services, local businesses are facing a tough battle to maintain relevance. These challenges, however, present an opportunity to evolve through the strategic use of smart Marcom.

By leveraging digital advertising tools, businesses in Bihar and Jharkhand can not only survive but thrive by turning their advertising spend into measurable lead generation within their existing advertising budgets.

Problem Statement: Limited Lead Generation Through Traditional Advertising

In Bihar and Jharkhand, many local businesses rely heavily on traditional media for advertising. While this brings visibility, it does little to track or convert those impressions into business.

Newspaper ads, radio spots, or even television ads typically serve as a form of one-way communication. Busi-

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Embrace digital tools, transform your advertising, and turn every rupee into measurable business growth

nesses pay for ad placement, but they don't have access to valuable data such as how many people saw the ad, how many people were interested enough to interact with it, or how many of them ultimately made a purchase or engaged with the brand.

Traditional media platforms generally offer little to no feedback on ad performance. Businesses have no clear way of determining which channels are driving actual leads or which parts of their advertising strategy need improvement. In this gap, smart Marcom strategies can step in to transform these traditional advertising budgets into lead-generating campaigns that provide clear insights and results. **Turning Advertising Spend into Business Leads**

Marcom strategies utilize digital marketing tools, data analytics, and customer insights to generate actionable leads. For businesses in Bihar and Jharkhand, this approach can be a gamechanger, especially as many still feel disconnected from the digital landscape. Here's how local businesses can start generating and refining leads:

1. Digital Platforms for Targeted Reach

Digital advertising platforms like Google Ads, Facebook, and Instagram allow businesses to target specific demographics, such as age, gender, and location. For example, a grocery store in Ranchi can target ads for local customers within a 10-mile radius, ensuring that its ads only reach people who are likely to make purchases. This form of hyper-local targeting ensures that every rupee spent is directed toward an audience who is most likely to convert. Local businesses in Bihar and Jharkhand can make use of these platforms to tailor their ads to their local customer base. This contrasts sharply with traditional media, where businesses have no control over who sees their ads or whether the audience is relevant to their product.

2. Real-Time Tracking and Analytics

Unlike traditional advertising, digital platforms allow businesses to track the performance of their campaigns in real time. This includes valuable metrics like

click-through rates, conversion rates, and the exact number of people who interact with the ad. Google Analytics, for instance, can show businesses how many visitors come to their website after clicking on an ad and which pages they visit. These tools help businesses understand their customer's behavior and refine their campaigns accordingly. For example, a local restaurant in Patna running an ad on Facebook promoting a new menu item can track the number of people who clicked on the ad, visited the restaurant's online menu, or even called to make a reservation. This level of insight allows for continuous improvement, unlike traditional media, where businesses often remain in the dark about campaign performance.

3. Lead Generation through Call-to-Action (CTA) Buttons

Smart Marcom emphasizes the use of call-to-action (CTA) buttons in ads, encouraging customers to take immediate action. A bakery in Jamshedpur, for instance, can use a "Order Now" button in its Facebook ad, which directs customers to a page where they can place an order online. This direct conversion path is something that traditional advertising can't provide. It helps businesses track exactly how many leads each campaign generates and provides an easy way to follow up. Digital marketing allows businesses to continuously refine their CTAs based on customer response. For instance, if an online restaurant promotion results in a high click-through rate but few actual orders, businesses can tweak their CTA to make it more compelling, such as adding urgency ("Limited time offer!"). This iterative process allows businesses to optimize their strategies over time.

4. Enhancing Local SEO for Increased Visibility

Search Engine Optimization (SEO) is essential for local businesses looking to appear in relevant searches. By optimizing their website for localized keywords like "best electrician in Ranchi" or "affordable groceries in Patna," businesses can rank higher in search engine results, making it easier for customers to find them. Google My Business, a free tool that helps busi-

Smart Marcom strategies transform traditional advertising budgets into measurable lead-generating campaigns, offering local businesses valuable insights and results

nesses manage their online presence, is essential for improving local search visibility.

Positive customer reviews and ratings on platforms like Google or Justdial further enhance visibility and trust. This makes businesses more likely to show up when customers search for services in their area, giving them a competitive edge over app-based competitors that often dominate search results.

5. Hyper-Local Digital Advertising

Unlike mass-market apps, local businesses can leverage hyper-local advertising techniques to engage their community. Geo-targeted ads, for example, allow businesses to advertise only within a specific radius of their physical location. This ensures that their marketing efforts are targeted to consumers who are most likely to visit or make a purchase. For example, a local fitness.

Incorporating localized content and sponsoring local events or collaborating with local influencers can increase a business's presence in the community. Such initiatives not only help in improving brand visibility but also enhance customer loyalty.

Refining Leads Through Digital Tools

For businesses in Bihar and Jharkhand that have already invested in advertising, refining their lead generation process is the next logical step. By integrating CRM (Customer Relationship Management) systems, businesses can track and manage leads more effectively. CRM tools allow businesses to segment their customer base, track interactions, and follow up on potential leads.

For example, a local car dealership in Ranchi can use a CRM system to track inquiries about test drives, monitor customer visits, and send personalized offers to those who showed interest in specific vehicles. This approach ensures that every lead is nurtured, increasing the likelihood of conversion.

Harnessing Digital Potential for Growth

For local businesses in Bihar and Jharkhand, embracing Marcom strategies can transform advertising expenditure into a powerful tool for lead generation and growth. By leveraging digital platforms, real-time analytics, SEO, and hyper-local advertising, businesses can gain a competitive edge over app-based services. The digital shift is not just about visibility but about measurable outcomes, customer engagement, and continuous refinement of marketing efforts.

Local businesses can no longer afford to treat advertising as a mere cost of doing business. By embracing smart Marcom, they can track leads, measure ROI, and refine their strategies to ensure long-term success in an increasingly digital world.

Survive. Adapt. Thrive

The rise of app-based services has disrupted traditional advertising methods, challenging local businesses in Bihar and Jharkhand. Traditional media, while increasing visibility, lacks measurable outcomes and lead-tracking capabilities. In contrast, digital platforms like Google Ads and social media enable targeted, cost-effective outreach with actionable insights. This shift highlights the importance of adopting smart Marcom strategies, utilizing data analytics and customer insights to transform advertising spends into measurable leads. By embracing digital tools, local businesses can not only survive but thrive, ensuring sustainable growth and relevance in an increasingly competitive market. Adaptation is the key to their continued success.

Innovation and Startups for Transformation: Challenges and Perspectives

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Abstract

India in general, and Bihar in particular, is on the cusp of economic transformation by leveraging innovation and allied dimensions and promoting the ecosystem of startups and entrepreneurship. Bihar's innovation and startup ecosystem is moving forward at a rapid and growing rate. Bihar is among some of the fastest-growing states in the country in the domain of innovation and allied aspects. The Government of Bihar is taking proactive steps and initiatives to give a catalytic boost to the innovation, startup, and entrepreneurial ecosystem. Bihar should take proactive steps to strengthen its position in the national and international ecosystem of innovation and startups.

Keywords: Startups, Innovation, Ecosystem, Entrepreneurship, GII.

1. Introduction

The cornerstone of economic growth and development lies in innovation, which fosters new enterprises, employment opportunities, and enhanced productivity. Moreover, innovation plays a crucial role in tackling urgent societal and global issues, such as shifts in demographics, health threats, limited resources, and environmental changes. Economies that embrace innovation tend to be more

efficient, resilient, and adaptable, thus capable of sustaining higher standards of living. Consequently, bolstering innovation emerges as a critical challenge for nations striving to achieve greater prosperity and improved quality of life for their citizens.

In light of this, the World Intellectual Property Organization (WIPO) prepares the Global Innovation Index (GII) every year based on around 80 indicators. This index gives the relative positioning of the various economies of the world based on their contributions and outcomes in innovation and allied areas. According to the latest GII ranking issued in 2024, Switzerland, Sweden, the United States of America, Singapore, the United Kingdom, the Republic of Korea, Finland, the Netherlands, Germany, and Denmark are the top 10 economies in the world, with Switzerland at the first rank and Denmark at the tenth rank.

In recent years, India has demonstrated consistent improvement in the Global Innovation Index (GII). The country's ranking has steadily climbed from 86th to 46th, then to 40th, and most recently to 39th position worldwide. According to the GII 2024, India maintains its 39th place globally. Furthermore, the WIPO has recognised India as the top-ranked nation in the Central and Southern Asia region in its 2024 GII report.

2. Innovation Ecosystem in the USA

The innovation ecosystem in developed economies like the USA is very dynamic and robust, having an optimal integration of national agencies, academia, private sector, nonprofits, foundations, and collaborative networks. In the USA, federal agencies like the National Science Foundation (NSF), Department of Energy (DOE), National Institutes of

Health (NIH), and Defense Advanced Research Projects Agency (DARPA) play an important and dynamic role in funding research and development (R&D) and other innovation-related initiatives by various stakeholders.

Universities and higher educational institutions like the Massachusetts Institute of Technology (MIT), UC Berkeley, Stanford University, etc., are some of the best hubs for cutting-edge research and development, startups, innovation, technology transfer, and allied areas. The technology transfer offices are the key drivers in the universities and higher education institutions to get intellectual property rights registered with the respective bodies of the govern-



ment, followed by the creation of spin-offs/commercialisation of the registered/patented IPRs.

The private sector ecosystem in the USA has been playing an important and dominating role by focusing on disruptive and grassroots innovation in diverse fields like clean energy, biotechnology, artificial intelligence, and deep tech. Large companies like Tesla, Amazon, and Google act as major enablers to startups, scaling up the mission of innovation by driving more R&D investments.

Leading angel investors in the USA, like Bill Gates, Max Levchin, Esther Dyson, Joanne Wilson, and

Naval Ravikant, have been actively investing in startups, giving a fillip and momentum to the startup ecosystem. Leading venture capital firms like Sequoia Capital, Andreessen Horowitz, Bessemer Venture Partners, Accel, Lightspeed Venture Partners, Khosla Ventures, New Enterprise Associates (NEA), Founders Fund, Benchmark, and Greycroft have played a phenomenal role in giving a catalytic and exponential boost to the startup ecosystem.

Top private equity organisations like Blackstone Inc., KKR, TPG Inc., The Carlyle Group, Thoma Bravo, Advent International, Warburg Pincus, Clayton Dubilier & Rice, and Silver Lake have invested millions of US dollars to strengthen the startups and entrepreneurial ecosystem in the USA.

3. Innovation Ecosystem in India

Startup India: The Startup India programme was launched in 2016, and to date, over 1,57,000 startups have been established and funded, spread across 95 percent of districts in the country. The country has produced 117 unicorns till January 2025, out of global figures of over 1,565 unicorns spanning around 53 countries and 291 cities.

Institute Innovation Council: The Ministry of Education, Government of India, has established a robust and strong ecosystem for innovation and startups in the country in association with the All India Council for Technical Education. The Ministry of Education has established the Institute Innovation Council in higher and technical institutions across the country.

4. Innovation Ecosystem in Bihar

Bihar has a strong and positively growing innovation ecosystem. Startup Bihar has been doing pioneering work in the state. Bihar's

innovation ecosystem is experiencing robust and positive growth, with Startup Bihar playing a key role in fostering this progress. The rapidly growing startup ecosystem has funded over 900 startups till January 2025 under the auspices of Startup Bihar.

Bihar Startup Policy

Startup Policy 2022: The Bihar government launched a revamped startup policy to encourage entrepreneurial activities by offering financial assistance, tax exemptions, and subsidies. It provides:

- Seed funding of up to Rs.10 lakhs.
- Incentives for women, SC/ST entrepreneurs, and differently-abled founders.
- Financial support for incubators.

Bihar StartUp Fund: A corpus of Rs.500 crores has been allocated to fund startups in diverse sectors like agriculture, healthcare, and technology.

Innovation Hubs and Incubators: The government has established innovation hubs/incubators in partnership with leading academic institutions and private players to mentor and guide startups.

Academic Institutions Driving Innovation

Several universities and technical institutions in Bihar are spearheading research and development:

Indian Institute of Technology (IIT), Patna: A leader in technological research, IIT Patna has multiple incubation centers supporting technology startups through its Technology Business Incubator (TBI). It focuses on emerging technologies like AI, IoT, and robotics. The incubator at IIT Patna also leads ESDM and Medical Electronics innovation.

Chandragupt Institute of Management Patna (CIMP): CIMP promotes social and business innovation through CIMP-BIIF, pioneering excellence in incubation and related domains. CIMP-BIIF also manages the co-working space B-Hub, established by the Department of Industries, Government of Bihar.

National Institute of Technology (NIT), Patna: NIT Patna encourages engineering students to develop innovative solutions through hackathons, workshops, and startup cells.

Venture Park: Venture Park is a leading business incubator established by the Bihar Industries Association.

Engineering Colleges of Bihar Engineering University: The incubation centers and E-Cells in various engineering colleges under Bihar Engineering University are making significant contributions to innovation and startups.

E-Cells in Colleges and Universities of the State: E-Cells in colleges and universities are dedicated to building and strengthening Bihar's startup and innovation ecosystem.

Business Incubation Centres

Chandragupt Institute of Management Patna - Business Incubation and Innovation Foundation (CIMP-BIIF): Provides multiple services and solutions to startups in Bihar.

Startup Incubation and Innovation Centre (SIIC): Based at IIT Patna, SIIC mentors startups in diverse fields.

Atal Incubation Centres (AICs): These centers promote innovative business ideas with funding and mentorship.

Bihar Entrepreneurs Association (BEA): Provides a platform for networking, funding, and scaling businesses across industries.

The Crucial Role of Innovation in Shaping Bihar

Innovation—defined as the creation, implementation, and spread of novel concepts, technologies, methodologies, and business frameworks—is a powerful catalyst for economic growth, societal progress, and ecological sustainability. For Bihar, embracing innovation is essential for several reasons:

Economic Expansion and Employment Generation: Bihar's dependence on agriculture has not yielded widespread prosperity. Agricultural innovation, such as contemporary farming practices, high-quality seeds, and efficient irrigation systems, can boost productivity and farmer incomes. Simultaneously, fostering innovation in manufacturing, tourism, and IT services can diversify the economy, create high-value employment, and attract investments.

Tackling Social Issues: Innovation can significantly enhance the quality of life in Bihar. E-learning platforms and digital literacy initiatives improve education accessibility, while telemedicine, affordable diagnostics, and community health programs address healthcare gaps, particularly in rural areas.

Environmental Sustainability: Bihar's vulnerability to climate change necessitates innovative approaches in resource management, disaster preparedness, and sustainable agriculture. Renewable energy, water conservation technologies, and climate-resilient crops can mitigate the effects of climate change while ensuring a sustainable future.

Enhanced Governance and Public Service Delivery: E-governance initiatives, data analytics, and citizen engagement platforms can improve transparency, accountability, and efficiency in public services. Innovative public procurement, project monitoring, and grievance redressal methods can strengthen governance and citizen trust.

Capitalizing on Human Resources: With nearly 58% of Bihar's population below 25, the state has immense potential for growth. This demographic dividend can be realized by investing in education, skill development, and fostering an entrepreneurial mindset. Innovative education and vocational training programs are crucial for preparing the youth for the modern economy.

Sector-Specific Innovation in Bihar

Agriculture

Bihar's agricultural sector faces substantial challenges, particularly due to frequent flooding. However, innovative approaches can help mitigate these issues. For instance, satellite-based technologies for identifying flood progression and affected rice fields can assist decision-makers in prioritizing relief and rescue operations. Additionally, the adoption of smart agriculture technologies, such as precision farming and IoT-based solutions, offers immense potential to improve soil quality, reduce water wastage during irrigation, and disseminate critical agricultural information to farmers. These innovations can transform Bihar's agricultural landscape, making it more resilient to environmental challenges while boosting productivity. Technology-enabled solutions in general, and drone technology in particular, should be leveraged to optimize costs and maximize productivity.

Education

Educational innovation encompasses the integration of new technologies, teaching methods, and organizational frameworks to enhance learning outcomes and system efficiency. Examples include classroom strategies and broader policy reforms aimed at improving educational delivery. However, fostering innovation is not without challenges—sustaining and scaling innovative practices often proves difficult, and the outcomes may not always meet expectations. Research further indicates that market-oriented reforms and charter schools, often promoted as innovation drivers, do not necessarily translate into significant changes in classroom practices.

Online universities and online schools shall be game-changers, apart from Skill Universities and Startup and Innovation Universities, to give a quantum fillip to the

envisioned accomplishment of the Gross Enrollment Ratio in the National Education Policy, with an optimal focus on employment generation and enhancement of employability.

Healthcare

Despite persistent challenges, Bihar's healthcare sector presents significant opportunities for innovation. Arsenic contamination in water, for example, severely impacts children's neurological development in certain districts. Introducing advanced water purification technologies or alternative water sources could effectively address this issue. Moreover, collaboration between public and private sectors, coupled with emerging technologies like artificial intelligence and blockchain, can enhance healthcare delivery and outcomes. These innovations have the potential to strengthen the overall health infrastructure in Bihar.

The rapid adoption of technology-enabled medical services to strengthen the pace and quality of patient services will go a long way. The quantitative and qualitative enhancement of medical facilities should be prioritized, with the latest labs, innovation centers, incubation centers, R&D centers, and simulation centers. Optimal focus should be placed on leveraging clinical and patient research into practice through the integration of AI, ML, robotics, big data, and blockchain technologies.

Integrated data centers to house comprehensive health information for all citizens of the state will be instrumental in managing healthcare effectively. A centralized strategy room with an online dashboard of all the state's hospitals and laboratories will facilitate the formulation of technology-enabled and data-driven strategies and their meticulous implementation.

Manufacturing

Bihar's industrial sector has grappled with socio-economic and

environmental challenges in the past. The Industries Department of the Government has formulated various sector-specific policies with an innovative approach to attract and retain industrial houses in the manufacturing sector by offering a variety of incentives. However, targeted support and focused initiatives can drive further industrial growth. Emphasizing green manufacturing and technological advancements, along with addressing infrastructure deficits and health concerns, can pave the way for sustainable industrial development in the state. By adopting innovative practices, Bihar's manufacturing sector could achieve significant progress, fostering economic resilience and environmental sustainability.

Benchmarking facilities, services, incentives, and allied aspects with an innovative approach, in comparison to other leading states, on a dynamic basis will go a long way in transforming the manufacturing sector in Bihar.

Way Forward for India and Bihar in Particular

This framework outlines a comprehensive, multi-faceted approach to cultivating a vibrant innovation and startup ecosystem across India, drawing inspiration from developed nations while adapting to the unique Indian context. The core objective is to empower innovators, entrepreneurs, and startups to thrive, driving economic growth and societal progress.

I. Infrastructure and Support Systems:

1. **Decentralized Technology Transfer:** Establish at least one dedicated Technology Transfer Office (TTO) in each state capital, supplementing existing TTOs like those at BIRAC, DSIR, IITs, NCBS, and NBM. This will facilitate the commercialization of research and intellectual property at the local level.

2. **Innovation Hubs and Cities:** Create dedicated Innovation Hubs or Cities in each state. These hubs will serve as focal points for collaboration, providing shared resources, mentorship, and networking opportunities for innovators and startups. Each state should also establish a dedicated Innovation and Startup City, offering a concentrated ecosystem of resources and support.
3. **Specialized Incubation and Acceleration:**
 - Establish dedicated incubators and accelerators in each state, focusing on emerging technologies such as AI/ML, Data Analytics, and related fields to foster expertise and targeted support for high-growth sectors.
 - Establish Technology Business Incubators in every state and university to transition research into viable businesses.
 - Develop large accelerator programs in every state to provide intensive support and resources to high-potential startups, helping them scale rapidly.

II. Education and Skill Development:

University-Level Integration:

- Establish dedicated Skill, Innovation, and Startup Universities in each state, providing specialized education and resources to enhance GER, employability, and employment generation.
- Launch Bachelor's and Master's degree programs in Innovation, Entrepreneurship, and Venture Development across all universities to create a consistent pipeline of skilled entrepreneurs and innovators.
- Establish large Entrepreneurship, Innovation, and Startup Centers within universities and colleges to provide hands-on training, mentorship, and resources.

School-Level Foundation:

Establish Tinkering Labs in every school nationwide to expose students early to STEM concepts, hands-on experimentation, and problem-solving, fostering a culture of innovation from a young age.

III. Intellectual Property and Commercialization:

1. **IPR Facilitation:** Establish IPR Facilitation Centers in every district and university to guide and support innovators and startups in protecting their intellectual property.

IV. Funding and Investment:

1. **Dedicated Stock Exchange for Startups:** Establish a dedicated stock exchange for

startups, providing an alternative exit strategy for investors and a new avenue for startups to raise capital.

2. **Significant Budget Allocation:** Allocate a substantial budget specifically for innovation, entrepreneurship, and startup development at national and state levels.

V. Streamlining Operations and Reducing Costs:

1. **Single Window Clearance:** Implement a Single Window Clearance mechanism for startups at the state and national levels to reduce bureaucratic hurdles and optimize their operations.
2. **Centralized Shared Facilities:** Create centralized facilities offering shared resources and infrastructure for startups and enterprises, optimizing costs and providing access to expensive equipment and services.

VI. Performance Monitoring and Incentives:

1. **National Ranking System:** Develop a National-Level Ranking Mechanism for states and districts based on their performance in fostering innovation and startup growth to encourage healthy competition.

VII. Proposed Hub and Spoke Model in Every State to Strengthen the Startup Ecosystem:

Startups, inventions, and a culture of innovation are crucial for societal development. They bring new ideas, technologies, and products that create jobs, improve living standards, and solve pressing societal challenges. The importance of startups

lies in their ability to disrupt established industries and create new markets, driving economic growth and innovation. Societies embracing startups and innovation are better equipped to adapt to changes, overcome challenges, and seize new opportunities. Governments, businesses, and individuals must support these elements to create a better future for themselves and future generations.

Hub and Spoke Model in Promoting Start-ups in Bihar

The hub and spoke model is a strategy used across various industries and sectors to optimize resource utilization, reduce operational costs, and improve efficiency. In the context of promoting start-ups, this model can be highly effective in connecting entrepreneurs with the resources they need to build their businesses. Under this model, the hub represents a central location serving as a resource center for start-ups. The hub provides access to funding, mentorship, networking opportunities, and other essential resources. The spokes, on the other hand, represent satellite locations that connect with the hub and offer services to start-ups in their respective regions.

The benefits of the hub and spoke model are numerous. Firstly, it creates a centralized platform for start-ups to access essential resources, regardless of their location. Additionally, it enables start-ups to tap into local resources and networks through the spokes, making it easier to navigate regional markets. Moreover, the hub and spoke model fosters collaboration and knowledge sharing between start-

ups. By bringing entrepreneurs together, the model creates an environment for exchanging experiences, insights, and expertise, which can be invaluable in the early stages of a start-up's development.

In the current scenario, the hub and spoke model provides an effective way to promote start-ups by offering access to essential resources, facilitating collaboration, and encouraging innovation. With the right support, start-ups can thrive, and this model can serve as a valuable tool in achieving that goal.

1. Aims and Objectives

The hub should ideally be located in the capital city and play a critical role in promoting start-ups. The primary aim of the hub and spoke model is to foster an environment for start-up incubation and acceleration across Indian states in general, and Bihar in particular. The major objective of the model is to create a sustainable start-up ecosystem that encourages innovation and entrepreneurship. The other objectives are as follows:

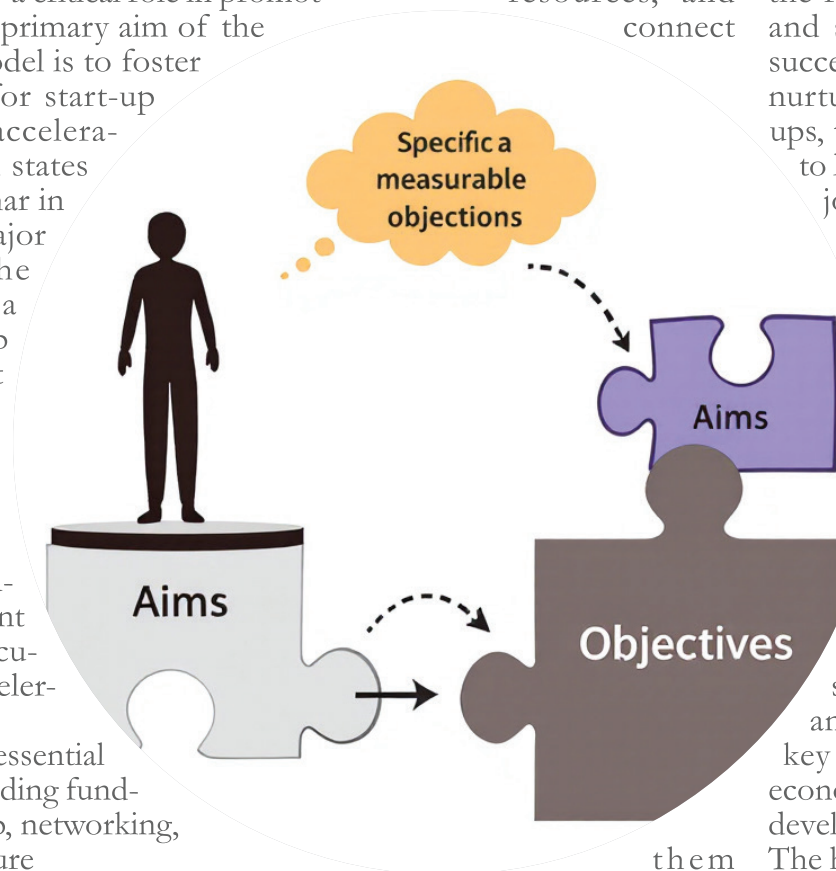
- Create a conducive environment for start-up incubation and acceleration
- Bring together essential resources, including funding, mentorship, networking, and infrastructure
- Support the growth and success of start-ups
- Identify and support promising start-ups
- Connect start-ups with potential investors, partners, and customers
- Facilitate collaborations and partnerships between start-ups and other stakeholders
- Foster a culture of innovation and entrepreneurship within the community
- Create awareness about the benefits of start-ups
- Provide training and mentoring to aspiring entrepreneurs
- Organize events and programs that promote innovation and entrepreneurship
- Build a thriving start-up ecosystem
- Create jobs, drive economic growth, and promote social welfare

To achieve these objectives, the hub will act as a central platform that consolidates all necessary resources, including funding, mentorship, networking, and infrastructure, to support start-up growth and success. The hub will identify and support universities (spokes) and provide them with the necessary training and resources. These universities, in turn, will guide promising start-ups, supply essential resources, and connect

will act as a spoke within the hub and spoke model, offering support and guidance to start-ups within its cluster. By implementing this strategy, the model aims to establish 10 spokes across Bihar to promote entrepreneurship throughout the state.

The hub should commit to fostering entrepreneurship and innovation in the region. As the central hub, it should aim to provide aspiring entrepreneurs with the resources, mentorship, and support they need to succeed. By identifying and nurturing promising start-ups, the hub can contribute to local economic growth, job creation, and social welfare. The hub institute should also organize programs and events, including hackathons, workshops, and seminars, to promote a culture of innovation and entrepreneurship. Through these efforts, the hub will help build a thriving start-up ecosystem in the region and position itself as a key player in promoting economic growth and social development.

The hub and spoke model is an effective way to promote start-ups, but its successful implementation requires significant financial resources. A well-planned and executed framework is essential to meet the requirements of all stakeholders, including start-ups, investors, mentors, and government agencies. The hub, as the central platform, needs investment in infrastructure, technology, and human resources to create a conducive environment for start-up incubation and acceleration. Similarly, the spokes, representing local



them with potential investors, partners, and customers.

The incubation centers in the universities will facilitate collaborations and partnerships between start-ups and other stakeholders, including corporations, government agencies, and mentors. Bihar's 38 districts will be organized into multiple clusters. Once the clusters are established, the focus will be on identifying a single high-potential university to serve as a hub for an incubation center. This center

start-up communities, require funding for events, training, and mentorship programs. Overall, a well-funded hub and spoke model can drive economic growth and create jobs in the community.

The proposed budget for the hub and spoke model may include the following expenses:

I. Infrastructure:

- Physical space for co-working, incubation, and acceleration
- Basic amenities like internet, electricity, and security
- Equipment and tools for prototyping, testing, and production
- Access to specialized facilities like labs, workshops, and studios

II. Human Resources:

- Experienced managers and mentors to oversee programs and activities
- Subject-matter experts to provide guidance and advice to start-ups
- Technical and business support staff for day-to-day operations
- Recruitment and retention strategies to attract and retain talented individuals

III. Programs and Services:

- Incubation and acceleration programs to help start-ups validate ideas and build businesses
- Mentorship and coaching programs to guide start-up founders
- Networking and partnership programs to connect start-ups with potential investors, customers, and collaborators
- Education and training programs to enhance the skills and knowledge of start-up founders and employees

IV. Outreach and Marketing:

- Branding and messaging strategies to build the institute's reputation and visibility
- Events and activities to showcase the institute's programs and services
- Public relations and media outreach to generate positive publicity and awareness
- Community engagement and outreach to build relationships and partnerships with local stakeholders

Conclusion:

The key to transforming the national and state economies is innovation, startups, and an entrepreneurial ecosystem, apart from various other domains/areas. It is important for states like Bihar to focus on creating a dedicated Innovation City/Hub along the lines of leading similar facilities at the international and national levels. The mission to become a developed economy by 2047 can be

accomplished if all the states of the country work towards becoming developed states by 2047.

The series of conferences, workshops, and research projects being conducted by Chandragupt Institute of Management Patna, nominated as the Lead Knowledge Institute by NITI Aayog, has been optimally indicating the need to focus on being innovative and adaptive to the latest technologies and innovations in the respective domains. States must adapt to changing times and technologies to remain nationally and globally competitive. The key to becoming a national and international leader is to focus on pioneering research and innovation in all sectors and domains of the economy.

This would require an enhanced allocation of budgets to various developmental and transformational initiatives, with optimal allocation to various initiatives pertaining to innovation, R&D, incubation, startups, incubators, accelerators, commercialization centers, etc.

With the concerted efforts of planning and development departments, along with all other departments of the state and the officials of NITI Aayog, most of the states in the country are in the process of formulating strategic and operational plans to become developed states by the end of 2047. This will optimally contribute to the goal of becoming a developed nation by 2047. The focus on R&D, innovation, startups, and entrepreneurship will enhance the pace of the envisioned vision, mission, goals, and objectives of becoming a developed state and nation by 2047.

Assessing the Impact of Bihar's Alcohol Prohibition Law on Society, Economy and its Legal Implications

Amrendra Singh
Lawyer Supreme Court

The Bihar Prohibition and Excise Act, 2016 banned the manufacture, sale, and consumption of alcohol in the State. It had repealed the Bihar Excise Act, 1915. A complete prohibition on alcohol was contemplated under the Act. It also provided for offences and punishment associated with them. While the decision was applauded for its potential social benefits, its economic and legal impact has been widely debated. This

Act has been the subject of various legal challenges concerning its constitutional validity and implementation. The creation of additional administrative and judicial infrastructure was not considered for its implementation, and the working of the law went haywire on various fronts. It increased the burden on courts and clogged them, particularly the rise in bail matters was of much concern. Enforcing the ban has stretched police

and judicial resources, often leading to overcrowding in jails due to alcohol-related arrests. This led the State to gradually bring various amendments in the Act in the years 2018, 2020, and 2022 respectively, but the provisions of amendments have also not gone very well and fail to address multiple issues that existed in the previous law.

The Bihar Prohibition and Excise Act, 2016 has been subject to scrutiny by both the hon'ble Supreme Court of India and the Patna High Court. While the law aims to create a positive social impact, its strict implementation has often been criticised for being draconian and punitive. The hon'ble Patna High Court declared the Act, including the amendments, unconstitutional for being violative of fundamental rights in the case titled as *Confederation of Indian Alcoholic Beverages Companies Vs. State of Bihar*. In another case, *Bihar Distillers and Bottlers Pvt. Ltd. Vs The State of Bihar & ors.*, the hon'ble Patna High Court addresses issues related to the state's authority to regulate industries involved in the production and manufacture of intoxicating liquors, particularly concerning industrial alcohol.

The courts have yet not decided on the constitutionality of the Act, and the hon'ble Supreme Court of India called all such petitions related to this Act to itself. The Supreme Court in January 2023 criticised amendments to the prohibition law that granted executive magistrates powers equivalent to Judicial Magistrates, including the authority to impose custodial sentences. The court expressed grave reservations about this arrangement, emphasising the constitutional separation between executive and judicial functions.

The bench led by Justice Sanjay Kishan Kaul questioned the state's reluctance to amend the law, suggesting that persisting with such provisions could lead the Court to grant bail to the accused under the Act. The hon'ble Supreme Court in *Satvinder Singh and others vs. State of Bihar* is currently reviewing the constitutional validity and practical implications of Bihar's prohibition law. This case examines issues such as individual rights, economic consequences, and the effectiveness of the ban in achieving its intended social objectives. The hon'ble court has sought comprehensive data from the Bihar government to assess



the law's impact on various facets of society, including crime rates, health statistics, and economic indicators.

While Bihar's alcohol prohibition law has led to notable social benefits, including reductions in alcohol consumption and intimate partner violence, many families report a significant reduction in alcohol-induced violence and improved household conditions. Women's groups, in particular, have welcomed the prohibition as a step towards better family health

and safety. For some sections of society, the prohibition has led to lifestyle changes, promoting savings and investments in education and health, but at the same time, it has also resulted in economic challenges and the emergence of illicit trade. The state government faced a significant revenue shortfall due to the cessation of alcohol sales, previously a major contributor to the state's exchequer. The estimated revenue loss stands at around Rs. 5,000 crore to Rs. 7,000 crore annually. Industries related to alcohol production, such as breweries and distilleries, have been completely paralysed, immensely impacting employment opportunities. Tourism, particularly in urban centres, has been mildly affected due to the lack of

alcohol availability for tourists. The government has had to allocate substantial resources to enforce the ban, including additional policing and surveillance. And last but not least, the commencement of this Act resulted in a surge of alcohol-related cases, significantly increasing the workload of already overburdened courts and overcrowding jails.

Reports suggest that a large proportion of the arrested individuals belong to economically weaker sections. The law has inadvertently fuelled corruption among law enforcement agencies. Apart from this, cross-border smuggling of alcohol from neighbouring states has risen significantly, posing challenges for border security and policing.

The Bihar Alcohol Prohibition Law is a landmark move aimed at addressing deep-rooted social issues. The prohibition has had mixed impacts on Bihar's society, economy, and legal system. While its societal benefits are evident, the economic and legal challenges necessitate a balanced approach.

Strengthening enforcement mechanisms, addressing the black market, and providing rehabilitation and alternative livelihoods for those affected are critical to ensuring the policy's success. Moving forward, a comprehensive review of its implementation and amendments to address the emerging challenges will be essential for sustaining the law's objectives and minimising its drawbacks. The overburdening of the legal system questions the sustainability of such a policy in the long term. The judicial observations underscore significant concerns pertaining to the implementation and impact of Bihar's prohibition law, particularly in terms of administrative overreach, lack of supporting data, systemic corruption, and disproportionate effects on marginalised communities. Hopefully, the ongoing Supreme Court case will play a pivotal role in determining the future of this policy, balancing constitutional considerations with the law's social and economic impacts.



From Vihar to Bihar: A Legacy of Enlightenment and a Future Tourism Powerhouse

Vaishali Seta

Travel Influencer and Founder Xtremeroads

Overview

The name Bihar originates from Vihar, derived from Sanskrit & Pali, meaning a dwelling place for monks and disciples in ancient temples and monasteries. Over time, history enveloped with the Chandragupta dynasty, leaving ruins for us to unfold. Vihar transformed into Bihar, with its local dialect, shaping the identity of a land deeply rooted in knowledge, enlightenment, and spirituality, resulting in salvation. And the above makes a perfect blend for present tourism.

Bihar was once the intellectual hub of the world, earning the title of Vishwa Guru. It was home to Nalanda University, the world's largest residential university, where scholars from across Asia studied multiple disciplines. Even today, the ruins of Nalanda serve as a reminder of Bihar's glorious academic past, holding immense potential for heritage and knowledge tourism.

Here, we are trying to shape the possibilities rather than looking back at what is done or not done.

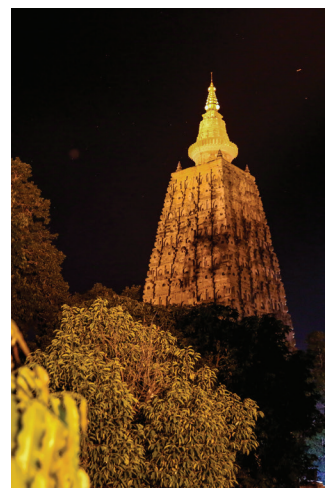
Opportunities and Possibilities in Bihar

Pilgrimage Tourism: Bihar's Spiritual Corridor
Bihar is a sacred land for multiple faiths, making it a prime destination for pilgrimage tourism.

1. Buddhist Circuit: Tracing the Path of Enlightenment

Bihar is the heart of the Buddhist circuit, attracting pilgrims from across the world. Key sites include:

- Bodh Gaya – The place where Lord Buddha



attained enlightenment under the Bodhi Tree.

- Rajgir – Ancient capital of Magadh and home to Buddhist monasteries.
- Vaishali– The site where relics of Buddha were found, and the Ashokan pillar stands, spreading peace across the world.
- Champaran (Kesariya Stupa) – One of the largest stupas in the world.

2. Hindu Pilgrimage Destinations

- Vishnupad Temple (Gaya) – A major site for Pind Daan, attracting lakhs of devotees during Pitrapaksha Mela.
- Maa Mundeshwari Temple (Rohtas) – One of the oldest functional temples in India.
- Sitamarhi & Janakpur – Linked to Goddess Sita and the Ramayana.

3. Jain and Sikh Pilgrimage

- Vaishali – The birthplace of Lord Mahavir, a major site for Jain followers.
 - Patna Sahib – The birthplace of Guru Gobind Singh, an important Sikh pilgrimage destination.
- Bihar's spiritual legacy ensures a steady influx of domestic and international pilgrims, with opportunities to enhance infrastructure and cultural experiences.---

4. Festival Tourism: A Cultural Extravaganza
Bihar's grand festivals provide a unique tourism attraction.

- Shravani Mela – The Kanwar Yatra attracts lakhs of devotees to the Baidyanath Jyotirlinga in Deoghar.
- Chhath Puja – Chhath Puja showcases Bihar's vibrant culture, attracting tourists with its spiritual rituals, folk songs, and unique riverside celebrations.
- Pitrupaksha Mela in Gaya – A Hindu event held during the Pitrupaksha period (September-October), where pilgrims perform rituals to honor their ancestors at the Vishnupad Temple and the Phalgu River.
- Buddhist Festival in Bodh Gaya – Celebrates Buddha's life and teachings, attracting pilgrims from around the world. Kalachakra Puja, held in December, includes prayers, meditation, and cultural events at the Mahabodhi Temple, focusing on spirituality and Buddhist philosophy.
- Sonapur Mela – A historic fair dating back to the Magadh Empire, known for its livestock trade and vibrant cultural festivities, comparable to Pushkar Mela. But as of now, it remains a local festival, gathering lakhs for one whole month.

With proper promotion, these festivals can attract global cultural tourism.

5. Rock Art Caves: Bihar's Untapped Heritage

The Hidden Legacy of Ancient Rock Art

Bihar is home to more than 300 rock art caves, preserving prehistoric paintings that narrate ancient life, rituals, and cultural evolution. These rock paintings, much like those in Bhimbetka, depict hunting scenes, tribal traditions, and spiritual symbols, offering a glimpse into early human civilization.

Over the past 10 years, dedicated research has uncovered Bihar's forgotten rock art sites. However, these treasures remain largely unexplored and unknown to tourists. With the right promotion and conservation efforts, these caves could become a major attraction for history enthusiasts, archaeologists, and cultural tourists.

Potential for Rock Art Tourism

- Development of guided archaeological tours showcasing the prehistoric paintings.
- Creation of heritage museums to display detailed research and discoveries.
- Promotion of rock art trails, similar to Bhimbetka, for experiential tourism.

By integrating rock art exploration into Bihar's tourism landscape, the state can position itself as a key player in India's prehistoric heritage tourism circuit.

6. Corporate and Knowledge Tourism: Nalanda as a Global Conference Hub

Nalanda: A Perfect Blend of History and Modernity
With its historical legacy as an educational hub,



Early Historic (Approx. 5000 Years Old) Rock Paintings Found in Kaimur, Bihar
-Discovered By Aamatya Team



Bihar's untapped treasure of over 300 rock art caves showcases prehistoric life through stunning paintings of hunting scenes, rituals, and symbols. Despite significant research in the past decade, these sites remain unknown to most tourists. With guided tours, heritage museums, and rock art trails, Bihar can unlock its potential as a hub for history enthusiasts and cultural tourism. Promoting these caves alongside Bhimbetka-like trails will position the state prominently in India's prehistoric heritage tourism circuit.

Nalanda has the potential to become a premier destination for corporate tourism and international conferences.

Why Nalanda is an Ideal Corporate Venue

- Historical Significance*** – The ruins of Nalanda University provide a unique backdrop for knowledge-driven events.
- Modern Infrastructure*** – The upcoming Nalanda International University can host academic conferences, global summits, and cultural exchanges.
- Connectivity*** – Proximity to Patna and Gaya airports makes it accessible for international delegates.
- Heritage Tourism*** – Corporate visitors can explore Rajgir, Bodh Gaya, and Nalanda ruins, adding a cultural dimension to business travel.

Future Possibilities for Corporate Tourism

- Establishment of conference centers within the Nalanda University campus, just like the Convention Centre in Rajgir.
- Development of luxury heritage resorts to accommodate corporate guests.
- Organization of knowledge summits, attracting global intellectuals and professionals.

With proper investment and promotion, Nalanda can emerge as a global intellectual hub, much like Oxford and Cambridge, fostering academic, cultural, and corporate exchanges.

By investing in conference centers, heritage resorts, and global summits, Nalanda can become a leading business tourism hub. ---



7. Agro-Tourism: Experiencing Bihar's Rural Beauty

Bihar is an agricultural powerhouse, offering farm-based tourism experiences.

Agro-Tourism Destinations:

- Makhana Fields (Mithilanchal) – Experience the unique process of fox nut farming, a GI-tagged product from Bihar.
- Litchi Orchards (Muzaffarpur) – Home to the world-famous Shahi Litchi, ideal for fruit-picking experiences.
- Mango Farms (Bhagalpur) – Explore the renowned Dudhwa Malda and Jhardalu, among almost 120 more varieties of mango orchards spread all over Bihar.
- Mustard Fields – Offering scenic rural landscapes perfect for farm stays.

Tourism Opportunities in Agriculture:

- Farm stays for an authentic village experience.
 - Organic farming workshops for nature enthusiasts.
 - Agri-food trails featuring Bihar's unique cuisine.
- With Bihar's rich agricultural heritage, agro-tourism can be a major attraction, especially for eco-conscious travelers.

Tourism Opportunities at VTR:

- Wildlife safaris featuring Bengal tigers, leopards, and elephants.
- Gandak River boating experiences.
- Trekking and camping in dense forests.
- Tharu tribal tourism, showcasing the indigenous way of life.

With better promotion and eco-friendly accommodations, Bihar can emerge as a wildlife tourism hub.

River Tourism: The Ganga and Bhagalpur's Dolphins

The Ganges River in Bihar is home to the Gangetic Dolphins, India's national aquatic animal. A river cruise experience in Bhagalpur, combined with dolphin-watching tours, can be a unique eco-tourism attraction.

8. Traditional Art Tourism: Madhubani Paintings and Global Recognition

Bihar's Madhubani Art is one of the world's most recognized folk art forms. Originating in the Mithila region, it has gained global fame, with exhibitions in museums and art galleries worldwide.

Madhubani as a Tourism Destination:

- Visit Madhubani and surrounding villages to witness artists at work.
- Workshops and art retreats where tourists can learn the techniques.
- Heritage walks through the Mithila region, experiencing its cultural essence.
- Madhubani souvenirs and handicraft markets for art lovers.

Recently, Madhubani art received a boost when Finance Minister Nirmala Sitharaman wore a Madhubani saree in a Budget session, highlighting its cultural significance. Bihar's present tourism minister belongs to the Madhubani district, and the department can promote Madhubani as an art tourism hub, attracting travelers and art enthusiasts from across the world.

Bihar: The Next Big Destination in Indian Tourism

Bihar is not just a land of history and spirituality—it is a complete tourism package. From pilgrimage circuits to eco-tourism, rock art explorations to corporate retreats, vibrant festivals to rural farm stays, and globally acclaimed folk art, Bihar offers something for every traveler.

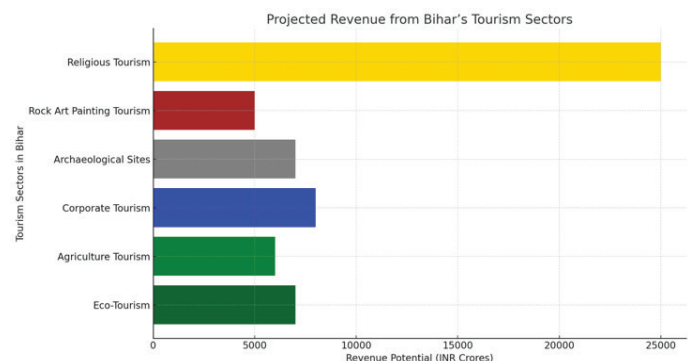
With strategic investments in infrastructure, promotion, and sustainable tourism models, Bihar can rise as a global tourism destination, reclaiming its ancient title of Vishwa Guru.

For those seeking an offbeat yet deeply enriching travel experience, Bihar is waiting to be explored!

Unlocking Bihar's Rs. 58,000+ Crore Tourism Potential

Bihar, with its rich cultural heritage, ancient archaeological sites, corporate growth, and diverse landscapes, has immense potential to become a leading tourism hub. By strategically investing in all the above, Bihar can attract millions of visitors annually, generating employment and boosting local economies.

1. Religious Tourism: The Spiritual Backbone



of Bihar

Bihar is home to some of the most revered sites in Hinduism, Buddhism, Jainism, and Sikhism. The Buddhist Circuit, Ramayan Circuit, Jain Circuit, and Sikh Circuit have global significance, attracting pilgrims from around the world.

Key Sites & Revenue Potential

- Bodh Gaya (Buddhist Circuit): Rs. 10,000+ crore from global Buddhist tourism.
- Ramayan Circuit: Rs. 5,000+ crore from Indian and Nepalese devotees.
- Jain Circuit (Vaishali, Pawapuri, Rajgir): Rs. 3,000 crore from Jain communities.
- Sikh Circuit (Patna Sahib): Rs. 2,000 crore from domestic and international Sikh pilgrims.

Development Priorities

- Expansion of air connectivity with Sri Lanka, Thailand, Japan, etc.
- Upgradation of rail and road infrastructure to connect pilgrimage sites.
- Creation of heritage hotels and pilgrimage-friendly accommodations.

Projected Revenue Potential: Rs. 25,000 crore

2. Rock Art Painting Tourism: Bihar's Hidden Prehistoric Heritage*

Bihar houses over 300+ rock art caves in Kaimur, Nawada, and Jamui, containing prehistoric paintings and carvings. These sites, comparable to Bhimbetka, can be developed into global archaeological tourism destinations.

Key Attractions & Revenue Potential

Kaimur & Jamui Rock Paintings: Comparable to UNESCO-listed sites, offering global archaeological interest.

Nawada & Rohtas Rock Art Caves:* Untapped sites with immense tourism potential.

Development Priorities

- Documentation, preservation, and guided heritage trails.
- International collaborations with archaeologists and research institutions.
- Promotion through documentaries and virtual tourism experiences.

Projected Revenue Potential: Rs. 5,000 crore

3. Archaeological Tourism: Reviving Bihar's Ancient Civilizations

Bihar, the cradle of Indian civilization, boasts some of the world's oldest universities, stupas, and ancient cities.

Key Sites & Revenue Potential

- Nalanda & Vikramshila Universities: Ancient learning centers, attracting global scholars.
- Kesariya Stupa (World's Largest Buddhist Stupa): Untapped potential for global Buddhist tourism.
- Lauria Nandangarh & Pataliputra (Mauryan Capital): Historical marvels needing global promotion.

Development Priorities

- Restoration and UNESCO recognition for major sites.
- Better visitor facilities, including museums and guided tours.
- Digital mapping and augmented reality experiences for historical sites.

Projected Revenue Potential: Rs. 7,000 crore

4. Corporate Tourism: Bihar's Rising Business Destination

With the rise of industrial hubs in Patna, Gaya, and Muzaffarpur, Bihar has significant potential for corporate tourism. The MICE (Meetings, Incentives, Conferences, and Exhibitions) sector can drive major investments.

Key Attractions & Revenue Potential

- Patna as a Business Hub:* Trade fairs, corporate summits, and government conferences.
- Rajgir & Bodh Gaya for Corporate Retreats:* A blend of spirituality and business.
- Industrial & Startup Summits in Gaya & Muzaffarpur: Encouraging entrepreneurship.

Development Priorities

- Establishment of world-class convention centers.
- Increased flight connectivity for business travelers.
- Promotion of Bihar as a startup and corporate hub.

Projected Revenue Potential: Rs. 8,000 crore

5. Agriculture Tourism: Tapping into Bihar's Rural Wealth

Bihar's fertile Gangetic plains make it an agricultural powerhouse, offering opportunities for organic farming tourism, rural stays, and agri-business visits.

Key Attractions & Revenue Potential

- Organic Farms in Nalanda & Madhubani: Promoting sustainable farming.
- Silk & Jute Industry Tours in Bhagalpur: Showcasing Bihar's textile heritage.
- Makhana & Litchi Plantations in Mithila & Muzaffarpur: Highlighting Bihar's agribusiness potential.

Development Priorities

- Development of eco-resorts in rural Bihar.
- Promotion of farm stays and rural tourism circuits.
- Government incentives for private investment in agri-tourism.

Projected Revenue Potential: Rs. 6,000 crore

6. Eco-Tourism: Bihar's Natural Beauty & Wildlife Attractions

Bihar's forests, rivers, and wildlife reserves offer untapped opportunities for eco-tourism and adventure tourism.

Key Attractions & Revenue Potential

- Valmiki Tiger Reserve: A potential hub for wild-life safaris.
- Vikramshila Dolphin Sanctuary: Home to the endangered Gangetic dolphin.
- Rajgir Hills & Hot Springs: A blend of adventure and wellness tourism.

Development Priorities

- Eco-friendly accommodations and jungle resorts.
- Adventure tourism, including trekking, river cruises, and safaris.
- Strengthening conservation efforts to protect wildlife.

Projected Revenue Potential: Rs. 7,000 crore

Projected Revenue Summary from Bihar's Tourism Sectors

Tourism Sector	Estimated Revenue Potential (INR Crores)
Religious Tourism	₹25,000 crore
Rock Art Painting Tourism	₹5,000 crore
Archaeological Sites	₹7,000 crore
Corporate Tourism	₹8,000 crore
Agriculture Tourism	₹6,000 crore
Eco-Tourism	₹7,000 crore
Total Potential Revenue	₹58,000+ crore

Conclusion: Bihar's Roadmap to a Rs. 58,000+ Crore Tourism Economy

With strategic investments, infrastructure development, and global branding, Bihar can transform into a multi-faceted tourism hub. The state's religious, archaeological, and eco-tourism potential can attract millions of visitors, while corporate and agricultural tourism can drive business investments.

By developing sustainable tourism models, enhancing connectivity, and promoting cultural heritage, Bihar can unlock Rs. 58,000+ crore in tourism revenue, positioning itself as a leading travel destination on the global map.



CLOSING ARGUMENT

Dialogue Moved to Tiny Steps for more Dialogues and Actions.

Rajeev Kumar

Programme Specialist (Risk & Resilience) UNICEF

Mind Space:

When something associated with Bihar, particularly coming as a private enterprise, gets you the chance to write again for their annual journal, it certainly impresses you. This is what happened when I got the invitation to write for the journal for this year's edition.

More Dialogues and More Actions:

GTRi is an interesting departure from what one observed in the city and in the state for so long. Academicians indulge in debates and dialogues within the expanse of academics, which may or may not be very relevant for the world outside their campus. GTRi dialogues over the last four editions have emerged as praxis for many of us, transcending the boundaries of theory and practice, which often operate in parallel worlds. Going by the opinions of past speakers, it has been rewarding. It brought various

interest groups together with a fair bit of emotions, reasoning, and urgency.

It has been reasonably successful in bringing three sets of people to dialogue over this platform:

First Set:

These are people whose origin traces back to Bihar but who perhaps will never return to the state. They debated at length across all editions about why they have no intention to come back. They have their own reasons for thinking so. Unless there is a clear change of heart or the professional landscape in the state changes completely, this group is not going to do much. At best, some developments only provide a pleasant shock for them. They wish the state good luck.

Second Set:

These are individuals who trace their parents' place to today's Bihar but were born and brought up in

the Jharkhand part of the then Bihar. This was the mineral-rich area that offered employment to many skilled professionals in the past, mostly their parents' generation. They have a fair amount of nostalgia for their grandparents' place. They are younger and have the hunger to at least do business in Bihar. Probably, they see huge consumer potential in the state, considering that entrepreneurial metrics are very different from emotions. They have exhibited a fair amount of passion to do something, and my assessment is that they are trying to fit Bihar into their whole supply chain.

Third Set:

This set comprises rank outsiders, which could be classified as friends of Bihar and the diaspora. The friends of Bihar are here for purely professional reasons. From the diaspora, many are interested in coming back and exploring the land of their own origin and forefathers. They are ready to do business as they are fearless and have professional reasons for doing so.

The G-dialogue has been successful in bringing all of them together to converse. Each set of people also had unique experiences, and evidence suggests they benefitted in more than one way.

Many of those conversations moved beyond panel discussions on the platform. Some resulted in either more dialogues or very concrete actions. The G-dialogue helps in literally creating space for focused dialogue on information technology and, quite uniquely, focuses on Bihar cuisine—"Pangat." These were huge successes. Pangat has been remarkable, with attendees sitting quite literally on the ground and relishing the Bihari Thali. This was organized in one of the upmarket hotels, and the chef enthusiastically helped curate the vision of the curator, Mr. Aditi Nandan. Very interestingly, it caught the attention of quiz masters and even made it to their lists. Who knows, it may be one of the questions in the upcoming Bihar Public Service Examination. That's what collective minds can bring.

A certain author managed to ink a deal with one of

the leading publication houses in the country, and the book is going to be launched in the fifth edition. All thanks to G-dialogue. I happened to eat delicious mangoes and bananas ripened through a process that used no chemicals—thanks to the connections I built. Professionally, I could reach many academicians and practitioners through this platform. There are many such professional exchanges of which I may not even be privy.

The Future Direction:

The title of this opinion piece says "More Dialogues and More Actions." Opinions are always divided on this. It's an extension of the classical debate—mind over matter. My limited understanding of many such engagements tells me there are two very different sets of people: those who dialogue and those who act. However, both are required.

While G-dialogue must grow from strength to strength to generate more dialogues, these dialogues must produce a good book, bring new business ventures completely alien to Bihar, and so on. More importantly, can two friends who never knew each other meet over dialogue and do something for the state?

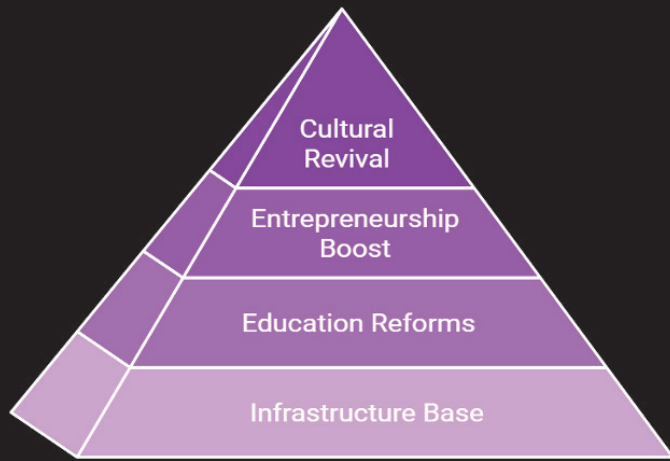
Who knows—today's dream is tomorrow's reality. Someone somewhere must be making those plans we don't know about. Let the mysteries of the G-dialogue Edition 5 unravel themselves.



True transformation begins when dialogues spark actions, bridging dreams with realities—because every conversation has the power to rewrite a state's destiny.



Bihar's Holistic Development Strategy



BUILDING LARGE BUSINESSES FROM THE HINTERLANDS FOR THE WORLD

Bihar contributed 2.75% to India's GDP in fiscal 2022-23. Home to about nine percent of the Indian population, Bihar has the lowest GDP per capita among all the states and UTs in the country, at Rs 35,119. District-level analysis shows that the per capita income of

the state capital, Patna, is high, at Rs 131,064, compared to districts such as Sheohar, with a per capita income of a mere Rs 19,592.

Such conditions often stem from multiple supply and demand constraints and give rise to many more constraints. Although there are many ways

Innovation and Startups for Transformation: Challenges and Perspectives

India in general, and Bihar in particular, is on the cusp of economic transformation by leveraging innovation and allied dimensions and promoting the ecosystem of startups and entrepreneurship. Bihar's innovation and startup ecosystem is moving forward at a rapid and growing rate. Bihar is among some of the fastest-growing states in the country in the domain of innovation and allied aspects. The Government of Bihar is taking proactive steps and initiatives to give a catalytic boost to the innovation, startup, and entrepreneurial ecosystem. Bihar should take proactive steps to strengthen its position in the national and international ecosystem of innovation and startups.

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