

# To What Extent Does Asymmetric Information Dissemination Through Nudges Affect The Economic Equilibrium In Nagpur, India?

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## I. INTRODUCTION

“Economics is the science which studies human behaviour as a relationship between ends and scarce means which have alternative uses”

### Lionel Robbins

*Understanding Economics and its types:*

Economics is a way to understand how we use limited resources to meet our unlimited wants and needs. It looks at how people make choices when there's not enough of everything to go around.

In economics, we talk about scarcity, which means there's not enough of something for everyone. We have limited things like land, labor, capital, and natural resources. But we have so many desires and needs that we can't fulfil them all.

To deal with scarcity, we must make decisions. We must choose what to produce, how to produce it, and who gets to have it. These decisions are made by individuals, businesses, governments, and societies.

Economics has two main parts: *Microeconomics* and *Macroeconomics*. Microeconomics focuses on how individuals and businesses make choices and how markets work. Macroeconomics looks at the whole economy and studies things like how much money we make, inflation, unemployment, and government policies.

*Understanding Asymmetric information, Nudges and Economic equilibrium:*  
*Asymmetric Information*

Asymmetry information is an imbalance between two negotiating parties in their knowledge of relevant factors and details. To further understand, that imbalance means that the side with more information has a competitive edge or advantage over the other party. Asymmetric information occurs when one party in a transaction has more information than the other party. In the context of economic equilibrium, this imbalance of information can lead to market inefficiencies and distortions. In Nagpur or any other location, if certain actors possess more information about the market conditions, product quality, risks, or opportunities, they can exploit this advantage to gain economic benefits at the expense of others.

For example, if a homeowner wanted to sell their house, they would have more information about the house than the buyer. They might know some floorboards are creaky, the home gets too cold in winter, or that the neighbors are too loud; information that the buyer would not know until after they purchased the house. The buyer, then, might feel they paid too much for the house or would not have purchased it at all if they had this information beforehand.

Just like every way of doing business has its own pros and cons, asymmetric information also has its own advantages and disadvantages.

**Advantages** - Asymmetric information isn't always a bad thing and can be beneficial in a healthy market economy. As individuals specialize in their chosen fields, they become more productive and can offer valuable expertise to others in different fields. For instance, a stockbroker's knowledge is valuable to a non-investment professional like a farmer who wants to confidently trade stocks for retirement planning. Conversely, the stockbroker doesn't need to possess farming skills but can rely on the farmer's products obtained from a grocery store.

**Disadvantages** - Asymmetric information can lead to fraudulent outcomes, such as adverse selection. Adverse selection occurs when an insurance company faces a high chance of significant loss because they were unaware of a risk when selling a policy. For instance, if a policyholder conceals their heavy smoking habit and participation in risky activities, this one-sided information flow creates adverse selection and may result in higher insurance premiums for everyone, causing healthy individuals to opt out.

*Nudges –*

To put this in economic terms, a nudge is simply any aspect of the choice that alters people's behavior in a predictable way without removing any options or significantly changing their economic incentives. In layman terms, a nudge could simply be influenced by small suggestions and/or positive reinforcements about a product. Nudges are subtle interventions or policy measures designed to influence people's behavior without restricting their freedom of choice. These interventions can be used to address information asymmetry by guiding individuals towards making decisions that are in their best interest. Nudges can take various forms, such as defaults, reminders, incentives, or social norms.

*Economic Equilibrium –*

Equilibrium is a state in which the supply and demand for a good or service are in balance. Economic equilibrium, however, is a condition or state in which economic forces are balanced. In Microeconomics, the term refers to the balancing of supply and demand, whereas, in Macroeconomics, it refers to a state in which the aggregate supply and demand are in balance. The impact of asymmetric information and nudges on economic equilibrium depends on various factors, including the nature and magnitude of information asymmetry, the effectiveness of nudges, and the specific market dynamics in Nagpur.

In economics we can think about something regarding market prices, supply, and demand. If the price in a given market is too low, then the quantity that buyers demand will be more than the quantity that sellers are willing to offer. Like the air pressures in and around the balloon, supply and demand will not be in balance. consequently a condition of oversupply in the market, a state of market disequilibrium.

The central concept of economics is divided into 9 concepts. Those being:

1. *Well-being*– The Economic well-being is a key part of economics as this looks over the equality between two distinct groups or individuals. A good example would be how men and women are treated in the kingdom of Saudi Arabia.
2. *Interdependence*- Individuals, communities and countries are interdependent, not self-sufficient. Economic groups such as consumers, households, businesses, and governments all interact together within and across national borders to achieve their economic goals.
3. *Scarcity*- Scarcity is a central concept in economics. Scarcity is the situation in which available resources, or factors of production, are finite, whereas wants are infinite. An example for scarcity would be creation of scarcity done by Sony in regard to their PlayStation 5 launch.
4. *Efficiency*- Efficiency is an important concept in economics because it represents the optimal use of resources, which leads to higher overall welfare and economic well-being.
5. *Choice*- Economics is the study of choice because resources are scarce and many needs and wants cannot be satisfied.
6. *Intervention*- Intervention means governments getting involved to rectify perceived failure in markets. Taxation is a good example of intervention.
7. *Change*- Change is an essential concept in economics. We need to be aware that the economic world is in a state of constant change and adjust our thinking accordingly.
8. *Equity*- Equity refers to the concept of fairness. Fairness has a different meaning from one person to the next.
9. *Sustainability*- Sustainability focuses on meeting the needs of the present without compromising the ability of future generations to meet their needs.

## **II. NAGPUR, INDIA.**

Nagpur Is the third-largest city and the winter capital of the Indian state of Maharashtra. Nagpur is the 13th largest city in India by population and according to an Oxford's Economics report, Nagpur is projected to be the fifth fastest growing city in the world from 2019 to 2035 with an average growth of 8.41%.

Nagpur is an emerging metropolis. Nagpur's nominal GDP was estimated to be around ₹ 1,53,027 crores in 2021–22, making it the largest economic center in entire central India. Nagpur district has a per-capita GDP of ₹ 2,46,750 as of 2021-22 financial year, being the highest in the central India. In 2004, it was ranked the fastest-growing city in India in terms of the number of households with an annual income of ₹ 10 million or more. Nagpur has been the main center of commerce in the region of Vidarbha since its early days and is an important trading location. Although, Nagpur's economic importance gradually declined relative to Mumbai and Pune after the merging of Vidarbha into Maharashtra because of a period of neglect by the state government, the city's economy later recovered.

The city is important for the banking sector as it hosts the regional office of Reserve Bank of India, which was opened on 10 September 1956. The Reserve Bank of India has two branches in Nagpur, one of which

houses India's entire gold assets. Sitabuldi market in central Nagpur, known as the heart of the city, is the major commercial market area.

Ranked 6069th (TOP 65%) in the list of best places to live in the world and 27th best city to live in India, and 5th most livable city in Maharashtra. . There are endless possibilities here for business, industry and investment. According to estimates, by 2050, the population of Nagpur will approximately double. Nagpur is also known as orange city, as it is the most important agriculture here. The principal crops here like sugarcane, soya bean, wheat, mung, pulses, gram, wheat, jowar, linseed, bajra, cotton, sunflower, groundnut, tur and others contributes to the economy of the city. Nagpur today is among the fastest developing cities in the world.

### III. LOCAL PERSPECTIVE

Nagpur, being one of the fastest growing cities in India, while also being the largest economic center in central India has given us a few examples of how nudges work in a domestic economy and one as large as Nagpur. It also can be used as an example of how there are differences in the way economies can work psychologically and economically.

In Nagpur, just like any other economy, there are situations where one party has more information than the other, leading to inefficiencies. Nudges can be used to address these gaps and improve decision-making. For consumer protection, nudges can provide clearer information about products and services, including pricing, fees, and risks. This helps consumers make informed choices and enhances market efficiency.

For any economic system there are three basic questions that need to be answered. Those 3 basic questions are What to produce? How to produce? For whom to produce?

*What to produce?* - All economies must choose the combinations and quantities of the goods and services that they produce.

*How to produce?* - All economies must choose how to use the resources they must produce goods and services.

*For whom to produce?* - All economies must choose how goods and services are to be distributed among the population.

Nagpur has answered these questions very well and the impact can be seen on how they are now the 5<sup>th</sup> fastest growing economy in the world. The use of economic systems and psychological traits such as nudges have helped improve the economy.

Nagpur has also used psychology to improve its economy by understanding behavioral insights to shape people's economic decisions and behaviors. Implementing nudges, such as default options or reminders, can encourage positive financial behaviors. For example, automatically enrolling employees in retirement savings plans or sending timely reminders for bill payments can promote responsible financial habits.

Nudges have played a significant role in improving Nagpur's economy and affect it in a positive way. Some potential benefits through nudges that were used in Nagpur are:

1. Improving Consumer Protection
2. Improving Public Health outcomes
3. Assisting Sustainable prices
4. Promoting entrepreneurship and business growth
5. Encouraging savings and financial planning

“The study of Indian economics is the study of the spinning wheel.”

**Mahatma Gandhi**

### IV. GLOBAL PERSPECTIVE

The complex and interrelated crises we are experiencing require a new term to capture the magnitude of the global challenges we face. The conflict in Ukraine caused a surge in energy and food prices, triggering a worldwide cost-of-living crisis and resulting in social unrest. Additionally, carbon emissions continued to increase as economies reopened post-pandemic. Existing dictionaries lacked a single word to encompass all these struggles. Hence, a new term is proposed: **Polycrisis**. The simultaneous occurrence of several catastrophic events is called Polycrisis.

**As per the World Economic Forum's Global Risks Report 2023 uses the term, to explain how, present and future risks can also interact with each other to form a Polycrisis , a cluster of related global risks with compounding effects, such that the overall impact exceeds the sum of each part.**

Equilibrium in an economy is a theoretical concept that is often difficult to achieve due to dynamic and uncertain conditions underlying supply and demand. The constant changes in relevant economic variables make it akin to a monkey randomly throwing darts at a dartboard while both the dartboard and the thrower are moving independently on a roller rink. The economy continually strives for equilibrium but never quite reaches it.

However, with practice, entrepreneurs come close to achieving it. They compete in the economy, using their judgment to make informed decisions about the best combinations of goods, prices, and quantities to buy and sell. The market economy rewards those who make better guesses through profits, effectively incentivizing entrepreneurs to move the economy closer to equilibrium.

Over time, advancements in information technology, along with the business and financial media, price circulars, advertising, and consumer and market research, provide entrepreneurs with more accessible information about supply and demand conditions. This combination of market incentives and increased availability of economic information accelerates the economy towards the correct equilibrium values of prices and quantities for all goods and services produced, bought, and sold.

In the UK, the Behavioural Insights Unit was set up to use behavioural economics to improve choices. Their remit includes:

1. Making public services more cost-effective and easier for citizens to use.
2. Improving outcomes by introducing a more realistic model of human behaviour to policy, and wherever possible.
3. Enabling people to make better choices for themselves.

## V. METHODOLOGY AND RESEARCH

### Methodology

#### Profile of the City – Nagpur

Nagpur, located at the center of the Indian subcontinent, is close to the geometric midpoint connecting major cities like Chennai, Mumbai, New Delhi, and Kolkata. The city houses the Zero Milestone, marking the center of India, which was historically used for distance measurement. Situated on the Deccan plateau, Nagpur has an average altitude of 310 meters above sea level. The region's geological composition includes alluvial deposits from the Kanhan River floodplain, resulting in sandy soil in some areas. Crystalline metamorphic rocks and lower Gondwana formations are found in different parts of the city. Nagpur has natural and man-made lakes, with Ambazari Lake being the largest. The city's natural drainage system is formed by the Nag River, Pilli Nadi, and other streams. Known for its green spaces, Nagpur was recognized as the cleanest and second greenest city in India in 2010.

In terms of methodology, economists, like other social scientists, are not able to undertake controlled experiments in the way that chemists and biologists are. Hence, economists must employ different methods, based primarily on observation and deduction and the construction of abstract models.

### Research

*Experimental Research:* Policymakers in New Delhi and Mint Street have been watching the global Polycrisis unfold over the past few years, moving policy levers as appropriate. There was a lot of concern on the global stage when India did not stand with the West in condemning Russia outright after the war began and instead boosted its crude oil purchases from the country. For now, it seems India has managed to benefit from its stance and has diversified its oil source bucket.

The Reserve Bank of India has also taken steps towards the internationalisation of the rupee, a process that will unfold over the long term. The finance ministry and the RBI worked in tandem last year when inflation spiked, as it did in the rest of the world. While supply-side measures and tax tweaks have helped cool price spikes, the lagged impact of monetary tightening is also likely taking effect.

*Data analysis:* Researchers use economy techniques to study large datasets and understand how nudges affect economic equilibrium. They apply statistical methods to identify cause-and-effect relationships between nudges and economic outcomes while considering other important factors. These analyses reveal the direct and indirect effects of nudges on the economy.

*Comparative studies:* Researchers compared different nudging strategies to see which ones are most effective in influencing economic equilibrium. They examine the outcomes of different nudges in various contexts to understand the most efficient and impactful approaches for achieving desired economic balance.

*Field Studies:* To further explain how field studies helped me understand nudges below are the studies I conducted:

### SHOP 1:

Nudged the tape and batteries in a stationery shop.

Shop Type - The shop is filled with pens, notebooks, colourful papers, and other stationery neatly organized on shelves. But we paid special attention to two items: tape and batteries.

### **Placement of Nudges –**

Tapes - As you go near the tape section, we set up small signs which were clearly visible to the customers. These signs have cute pictures of tape rolls and fun messages like "Use our tape for perfect wrapping!" or "Our tape is great for sticky situations!" We designed these signs to catch the attention and remind consumers how useful tape can be in your daily life.

Batteries - We offered special promotions on bundle deals where customers can purchase multiple batteries at a cheaper price as compared to the cost of single batteries. We highlighted the cost savings and convenience of buying multiple batteries together.

**Impact on the sales** - Over a period of 14 days the purchase of tape and batteries had increased by 36.3% and leading to an increase in the monthly income by 5.3%.

### **SHOP 2:**

Nudged a Snicker bar in a local Mini mart.

Shop type – A small mini-mart situated in a local town home to a small population. The go to store for all your daily needs.

### **Placement and Implementation of Nudges –**

1. Beside the two cash counters, where absolutely everyone walks through and was kept at eye level so to be clearly visible to shoppers.
2. Instructed cashiers to nudge customers during payment asking if they would like a snicker to round off their totals to the nearest hundred.
3. Placed a sign across the mart saying, "Don't leave without a snicker!"

**Impacts on the sales** - Over a period of 14 days the increase in purchase of snickers was astonishing, a 55% growth rate and a 15% increase in the income of the shop. The most successful nudge was the cashiers asking customers if they would like to add a snicker bar to their cart. This resulted in a high conversion of sales.

## **VI. EVALUATION**

The research focused on understanding the effects of nudges on economic equilibrium by studying different scenarios. In the case of a stationery shop, nudges were used to promote the sales of tape and batteries. Signs with appealing messages and illustrations were placed near the tape section, while special promotions on bundle deals were offered for batteries. The results showed a significant increase in the purchase of these items, leading to a boost in monthly income.

Similarly, in a local mini mart, a nudge was applied to encourage the purchase of Snicker bars. Nudges were implemented at the cash counters, with cashiers actively suggesting adding a Snicker bar to customers' purchases. Additionally, a sign was placed in the mart as a reminder. The outcome demonstrated a remarkable growth in Snicker bar sales and an increase in the shop's income.

Overall, these studies highlighted the positive impact of nudges on influencing consumer behaviour and improving economic outcomes in Nagpur. By strategically placing nudges and utilizing persuasive techniques, businesses can enhance their sales and generate higher revenue. These findings emphasize the significance of understanding and implementing effective nudges to achieve economic equilibrium.

On a personal note, while doing the research and understanding how even the slightest change in the economy can make such a huge impact, I learnt the importance of consumer satisfaction and allocation of resources. The different ways of going about achieving economic success and understood the risks of taking shortcuts to achieve economic equilibrium.

## **VII. CONCLUSION**

In conclusion, when information is shared through nudges, it has a big impact on how the economy balances out. Asymmetric information, where one side knows more than the other, can mess up the way markets work and lead to not-so-good results. But nudges can help fix this by guiding people to make better choices with the information they have.

Nudges help deal with problems in markets and prices by making things clearer, helping people make better decisions, and encouraging responsible behaviour. By nudging people towards smarter choices, nudges make markets work better, reducing issues like unfair selection and risky behaviour.

Also, nudges can make a positive difference in how people take part in markets and use resources. By removing obstacles and giving helpful information, nudges motivate people to get involved in markets and use resources wisely. They also promote actions that are good for the environment, which helps create a more balanced economy.

We also understood how the different ways an economy can run as well as be improved with the help of economic and psychological systems. Any economy must answer the 3 basic questions and once they answer that, the next step would be to allocate resources accurately and in a way that promotes sustainability.

To further conclude, In a fast pace and growing economy like Nagpur, nudges will make a positive impact if they can be executed to the point and made easier for the consumers to understand. The impact could be highly positive and welcoming by the consumers if there is a respect for their freedom to choose and there is a constant update to the market trends.

“Economics is everywhere, and understanding economics can help you make better decisions and lead a happier life”.

## **VIII. SUMMARY**

Economics, as defined by Lionel Robbins, is the science that studies human behaviour in the context of limited resources and unlimited wants. The fundamental concept of scarcity lies at the core of economics, where available resources are finite, but human desires are infinite. This imbalance forces decision-making in allocating resources to fulfil various needs and wants, making economics an essential field in understanding human behaviour and societal organization.

To dive deeper into the subject, economics is divided into two main branches: microeconomics and macroeconomics. Microeconomics focuses on individual economic things such as consumers and firms, analysing their decision-making processes and how markets function. On the other hand, macroeconomics examines the overall economy, studying factors like national income, inflation, unemployment, and government policies.

Three key economic concepts that play significant roles in shaping economic behavior are asymmetric information, nudges, and economic equilibrium. Asymmetric information occurs when one party in a transaction possesses more knowledge than the other, leading to imbalances in the market. This disparity can result in adverse outcomes, particularly in markets where information is crucial for making informed decisions.

Nudges are subtle measures designed to influence human behaviour positively without restricting freedom of choice. These nudges can take various forms, such as defaults, reminders, incentives, or social norms. By understanding human psychology and decision-making processes, policymakers can use nudges to guide individuals towards making choices that align with their best interests, leading to improved economic outcomes.

Economic equilibrium, another essential concept, refers to a state of balance between the supply and demand for goods and services in an economy. Achieving economic equilibrium is a theoretical ideal but often challenging due to dynamic and uncertain conditions in the marketplace. However, through entrepreneurship and market competition, economies tend to move closer to equilibrium, optimizing resource allocation and prices.

In the city of Nagpur, we find a bright and fast-growing metropolis with significant economic importance in central India. Nagpur's strategic location and well-developed infrastructure have contributed to its emergence as a major economic center. With a diverse economy involving industries like agriculture, manufacturing, and banking.

From a local perspective, Nagpur's success can also be attributed to its effective use of nudges in addressing information asymmetry and enhancing decision-making. By employing nudges to improve consumer protection, public health outcomes, and encourage sustainable pricing and financial planning, the city has achieved positive results in various sectors of its economy.

Examining the global economic landscape, the concept of Polycrisis emerges as a term to describe the simultaneous occurrence of multiple tragic events impacting the global economy. Policymakers and economists face the complex challenge of understanding and responding to these interconnected crises, which often worsen one another, resulting in severe economic consequences.

In conclusion, economics serves as a fundamental science in understanding human behaviour, resource allocation, and societal organization. The concepts of scarcity, asymmetric information, nudges, and economic equilibrium shape economic decision-making and outcomes. Nagpur's success as a rapidly growing economic center is a testament to the effective implementation of nudges and sound resource allocation strategies.

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