A study on Bridging gap between technology (AI collaboration) with local markets

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Abstract

The rapid growth of Artificial Intelligence (AI) has changed modern business practices. Still, its use in local markets and small businesses is limited. This study aims to connect AI technologies with local market operations. It explores how AI collaboration can improve efficiency, customer engagement, and competitiveness for local businesses. The research looks at how AI tools like data analytics, chatbots, digital payment systems, personalized marketing, and inventory management can fit into traditional market structures without undermining their core values.

The study uses a mixed-method approach. It combines secondary data from existing literature with primary data collected through surveys and interviews with local shop owners and consumers. It analyzes key challenges such as low digital literacy, high implementation costs, infrastructure issues, and resistance to change. The research also highlights the opportunities that AI provides for better decision-making, supply chain optimization, understanding customer behaviour, and expanding market reach through digital platforms.

The findings suggest that working together to adopt AI, using affordable tools, government support, training programs, and partnerships with tech providers, can significantly close the technology gap in local markets. The study concludes that AI collaboration is not meant to replace traditional business models. Instead, it aims to strengthen them, promoting sustainable growth and resilience in a more digital economy. This research offers valuable insights for policymakers, technology developers, and local entrepreneurs looking for inclusive and balanced technological development.

Introduction:-

We live in a time where everything is moving fast because of computers and the internet. Technology is a part of this and it changes the way companies work and grow. One of the technologies that people are talking about is Artificial Intelligence (AI). Artificial Intelligence is a help to companies because it can do tasks on its own look at lots of information and help people make good decisions. Big companies and companies that work in countries are using Artificial Intelligence to get things done faster and make their customers happier. However, even with all these new technologies, local markets and small businesses still not using them. Artificial Intelligence is still something that many small businesses do not know about or use. Local markets and small businesses are missing out on what Artificial Intelligence can do, for them. There is a difference, between the technology we have today and the way things are done in local markets. This difference is very noticeable. It is causing problems. The modern technology and local market operations are not working together.

Local markets are really important for the economy in countries that are still growing. These markets have lots of shops people selling things on the street artists, farmers and families who own their own businesses. They do business by talking to people and using ways that have been around for a long time. Local markets do not just give people jobs they also help keep the culture and social things that make our society special. Even though local markets are so important the people who run these small businesses are having a hard time using new technology like computers and things. Local markets are still having trouble, with this. Limited budget, lack of digital literacy, inadequate infrastructure, and fear of technological complexity are some of the primary reasons for the slow adoption of AI technology by local businesses.

There are Artificial Intelligence tools that can help small businesses like digital payment solutions, demand forecasting, customer data analysis, chatbots and inventory management solutions. These Artificial Intelligence tools can help local vendors do things faster and better. They can also help them reach more people. Artificial Intelligence can really make a difference, for small businesses. When we use Artificial Intelligence as a tool that works with people it helps the ways of doing business. This means Artificial Intelligence will make traditional business methods stronger of changing them completely. Artificial Intelligence is a thing, for traditional business methods when it is used in this way.

Local business owners need to learn about intelligence. They do not have the chance to get the training they need. The people in charge are not helping them either. This makes it hard for artificial intelligence to be used in markets. As a result, small businesses have a time competing with businesses that are good with technology, in today's world where technology is very important. Local markets and technology are very different. This affects local business owners and their use of artificial intelligence.

Review of Literature

Kumar et al. (2019), in a study published in the *International Journal of Information Management*, examined AI adoption among small and medium enterprises. The authors found that many small business owners perceive AI as complex and costly. This mindset discourages adoption and increases the gap between modern technology and local market practices.

Davenport and Ronanki (2018), in their article published in *Harvard Business Review*, discussed the collaborative role of AI in business. They argued that AI works best when it supports human decision-making rather than replacing it. Their study suggests that this collaborative approach is particularly suitable for local markets where human interaction plays a key role.

Verhoef et al. (2021), in their research published in the *Journal of Business Research*, discussed digital transformation across different business sizes. They emphasized that technology adoption should be inclusive and scalable. According to the authors, without targeted support for small businesses, digital transformation may increase the gap between large firms and local markets.

Objective:-
- To examine the extent of Artificial Intelligence (AI) adoption in local market businesses.
- To analyze the role of AI as a collaborative tool in supporting local market operations.
- To identify the key barriers faced by local market participants in adopting AI technologies.
- To evaluate the impact of AI collaboration on the performance and efficiency of local market businesses.
- To propose strategies for effectively bridging the gap between AI technologies and local markets

Hypotheses

H_0-There is no significant impact of AI collaboration on the performance of local market businesses.

H_1-AI collaboration has a significant positive impact on the performance of local market businesses.

Research Design:-

- Type of Research

The current study uses an approach to look at things and analyze them. This approach helps us understand how much people, in the market know about Artificial Intelligence how much they use Artificial Intelligence and what they think about Artificial Intelligence. We also use analysis to see how Artificial Intelligence teamwork affects the market results.

- Nature of Research

This study is about people and what they think. It is based on information that we got directly from the people we asked. The research looks at what people think and feel about working with Artificial Intelligence in their local communities. The study is, about Artificial Intelligence collaboration. How people see it in their local markets.

- Sources of Data

The study uses both data and secondary data. This means it looks at information, which is the primary data and also looks at information that someone else has already collected which is the secondary data. The study is using these two types of data, primary data and secondary data to get an understanding of things.

o Primary Data: Collected from local market business owners/vendors and consumers through a structured questionnaire to understand their awareness, usage, and perception of AI-based services in local markets.

o Secondary Data: Collected from academic journals, research papers, books, government reports, and online sources related to AI, technology adoption, and local markets.

- Sampling Design

This study is based on people who're easy to reach and willing to take part. The people in the study are market vendors and consumers. The local market vendors and consumers are the people we are talking about in this study.

- Sample Size

The sample is made up of people who sell things at the market and the people who buy from them. The number of people, in the sample is decided by what's possible who is available to answer questions and how much time we have to do this.

- Tools for Data Collection

We use a list of questions to collect information. This list has questions that people can answer with a choice. We want to know what people think and feel about working with Artificial Intelligence in their community. It helps us understand what consumers and vendors think about Artificial Intelligence collaboration, in local markets.

- Tools for Data Analysis

The collected data is analyzed using statistical tools such as percentage analysis, mean, and hypothesis testing techniques to interpret findings and draw conclusions.

- Period of the Study

The study is conducted over a specified period, focusing on the current practices and perceptions of AI usage in local markets.

- ✓ Scope of the Study

The scope of the study is limited to local markets, covering both business owners and consumers, with emphasis on understanding how AI collaboration can improve business performance and customer experience without replacing human interaction.
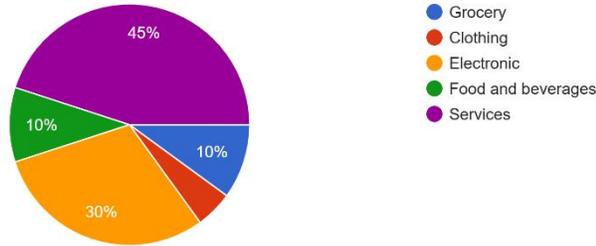
Limitations of the Study

- The study is limited to selected local markets.

- Use of convenience sampling may affect generalization of results.
- Responses are based on personal perceptions, which may involve bias.
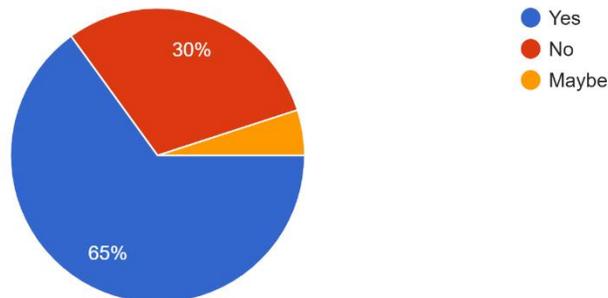- Time constraints limit the sample size.

Data Analysis

Area of business
20 responses

Area of Business	Percentage	Number of Responses
Grocery	10%	2
Clothing	5%	1
Electronic	30%	6
Food and Beverages	10%	2
Services	45%	9

Do you currently use any digital tools for your business?
20 responses

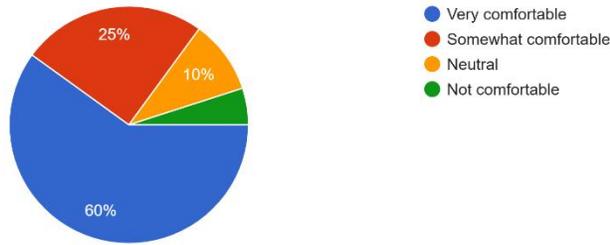| Response	Percentage	Number of Responses
Yes	65%	13
No	30%	6
Maybe	5%	1

If yes, which tools do you use? (Multiple choice)
20 responses
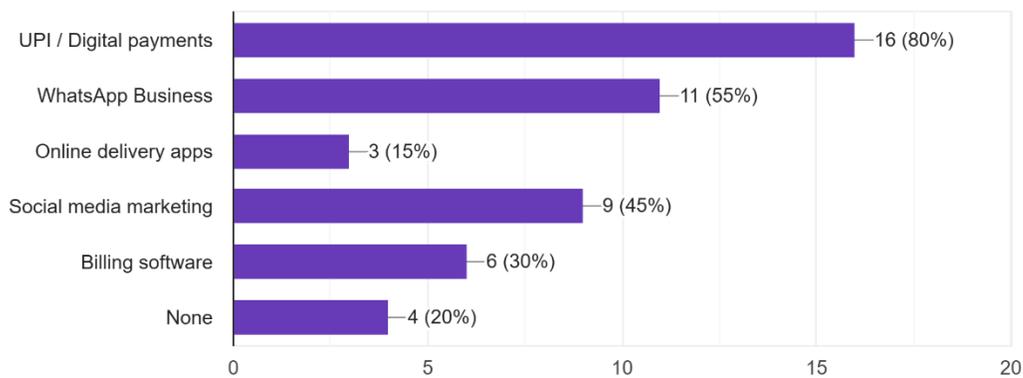
Digital Tools Used	Percentage	Number of Responses
UPI / Digital payments	80%	16
WhatsApp Business	55%	11
Online delivery apps	15%	3
Social media marketing	45%	9
Billing software	30%	6
None	20%	4

How comfortable are you with using technology?
20 responses

- Very comfortable
- Somewhat comfortable
- Neutral
- Not comfortable

Comfort Level	Percentage	Number of Responses
Very comfortable	60%	12
Somewhat comfortable	25%	5
Neutral	10%	2
Not comfortable	5%	1

Do you face difficulties while using digital tools?
20 responses

- Yes
- No
- Maybe
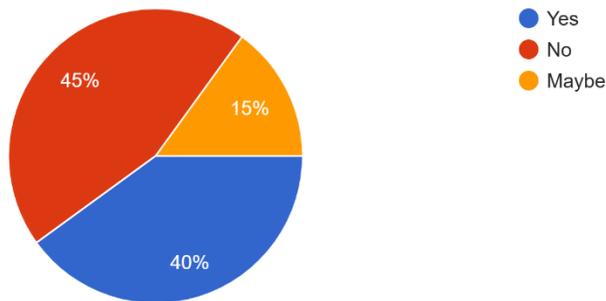
Response	Percentage	Number of Responses
Yes	40%	8
No	45%	9
Maybe	15%	3

If yes, what kind of difficulties?

20 responses
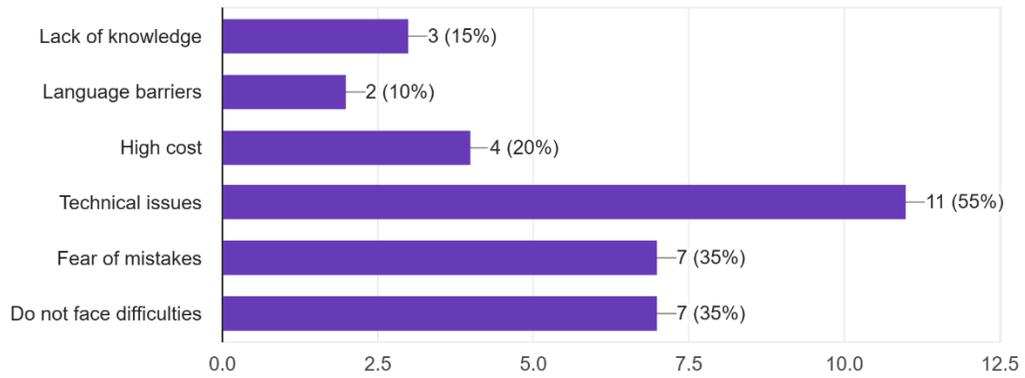
| Type of Difficulty	Number of Responses	Percentage
Lack of knowledge	3	15%
Language barriers	2	10%
High cost	4	20%
Technical issues	11	55%
Fear of mistakes	7	35%
Do not face difficulties	7	35%

Have you heard about Artificial Intelligence (AI)?
20 responses
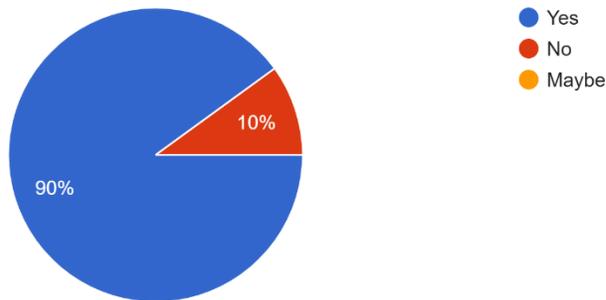
Response	Percentage	Number of Responses
Yes	90%	18
No	10%	2
Maybe	0%	0

How would you rate your understanding of AI?

20 responses

- Good understanding
- Basic understanding
- Heard the term only
- No understanding

45%

50%
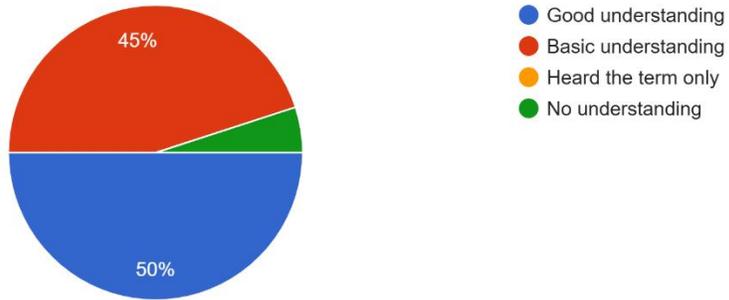
Understanding Level	Percentage	Number of Responses
Good understanding	50%	10
Basic understanding	45%	9
Heard the term only	0%	0
No understanding	5%	1

Where did you hear about AI from?
20 responses
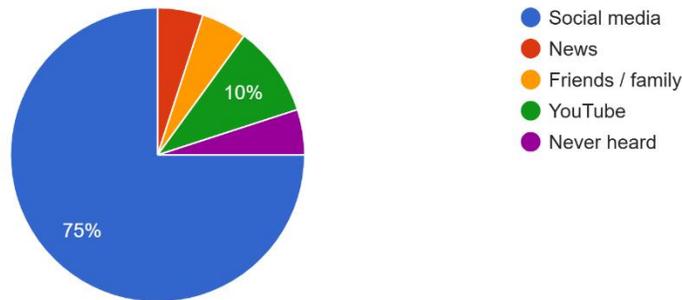
Source	Percentage	Count (Out of 20)
Social media	75%	15
YouTube	10%	2
News	5%*	1
Friends / family	5%*	1
Never heard	5%*	1

Do you believe AI can help local businesses grow?

20 responses

Legend:
- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree
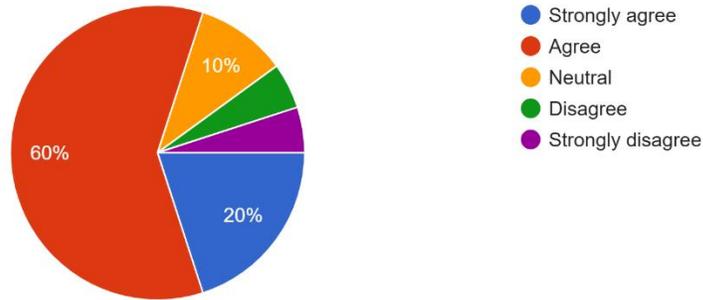
Sentiment	Percentage	Count (Out of 20)
Agree	60%	12
Strongly agree	20%	4
Neutral	10%	2
Disagree	5%*	1
Strongly disagree	5%*	1

Which areas do you think AI can help local markets in? (Multiple choice)
20 responses
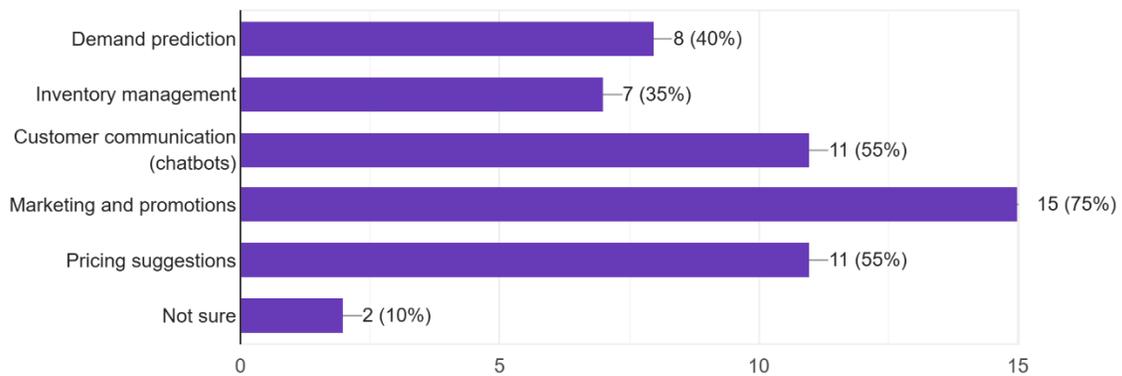
Area of AI Application	Number of Responses	Percentage of Respondents
Marketing and promotions	15	75%
Customer communication (chatbots)	11	55%
Pricing suggestions	11	55%
Demand prediction	8	40%
Inventory management	7	35%
Not sure	2	10%

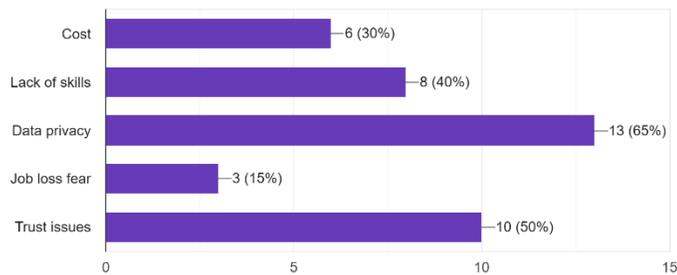Would you be willing to use AI-based tools if they are simple and affordable?
20 responses

- Yes
- No
- Maybe
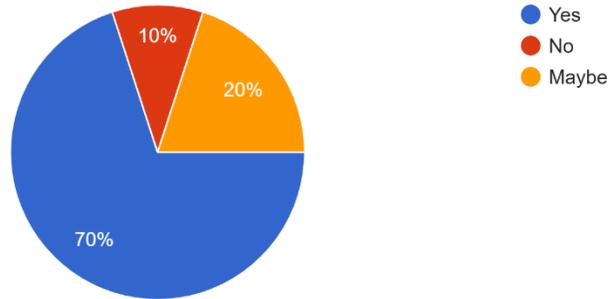
Response	Percentage	Number of Respondents (out of 20)
Yes	70%	14
Maybe	20%	4
No	10%	2

What is your biggest concern about using AI?
20 responses

Area of AI Application	Percentage	Number of Responses
Marketing and promotions	75%	15
Customer communication (chatbots)	55%	11

Pricing suggestions	55%	11
Demand prediction	40%	8
Inventory management	35%	7
Not sure	10%	2

Do you think AI will replace local shopkeepers?
20 responses
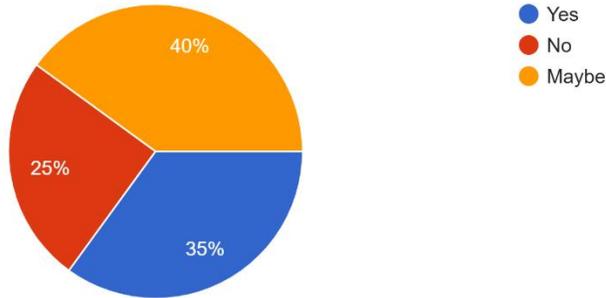
AI Application Area	Percentage	Total Responses
Marketing and promotions	75%	15
Customer communication (chatbots)	55%	11
Pricing suggestions	55%	11
Demand prediction	40%	8
Inventory management	35%	7
Not sure	10%	2

What would help local markets adopt AI easily?

20 responses
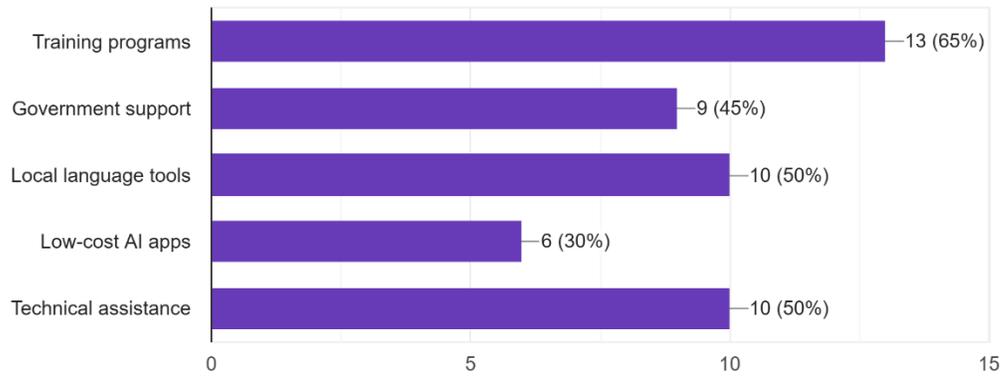
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Demand prediction	8	40%
Inventory management	7	35%
Not sure	2	10%

Who should play the biggest role in promoting AI adoption?
20 responses

- Government
- Private companies
- Local associations
- Educational institutions
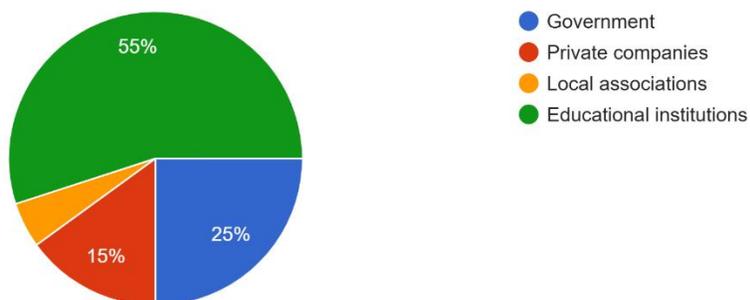
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Customer communication (chatbots)	11	55%
Pricing suggestions	11	55%
Demand prediction	8	40%
Inventory management	7	35%
Not sure	2	10%

Do you believe AI collaboration can strengthen local markets rather than replace them?
20 responses
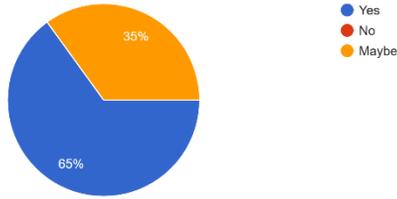
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Pricing suggestions	55%	11
Demand prediction	40%	8
Inventory management	35%	7
Not sure	10%	2

Findings

The study includes responses from consumers, business owners, service users, small vendors, and people from local markets. Most of the people who answered the study are connected to the service sector then come people who work with electronics and other local businesses. A lot of people said that they use tools like UPI payments, WhatsApp Business and social media when they are in local markets. This means that online payments and digital communication are becoming very important for business and shopping activities. People use tools like UPI payments and social media, for business and shopping.

People are getting used to technology. That is a good thing because it means they are okay with the new digital stuff. Some people do have problems with it though like when things do not work or it is too expensive. They are also scared of doing something when they use digital tools. The study found out that most people know what Artificial Intelligence is but they do not really understand it well. Artificial

Intelligence is something that people mostly learn about from media, which is where they get their information, about Artificial Intelligence.

Most respondents believe that AI can help improve business and customer services, especially in marketing, communication, pricing, and predicting customer demand. The findings also show that many respondents are interested in using AI in the future, which shows that AI has good growth potential in local markets

Conclusion

The research shows that Artificial Intelligence has really changed the way businesses work today. Artificial Intelligence is not being used as much as it could be, in local markets because there are some big problems that get in the way. This study found out that when local businesses work with Artificial Intelligence it really helps them do better and work efficiently. It does this by making customers happier and helping businesses compete with others. What the study found out is that Artificial Intelligence does not replace the ways of doing business. Instead, Artificial Intelligence makes these old ways stronger which helps businesses keep going and growing in a world where everything is becoming digital and Artificial Intelligence is playing a bigger role.

People who buy and sell things in their areas think that Artificial Intelligence can really help with certain tasks. For example, most people 75 percent think Artificial Intelligence can help with marketing and promotions. 55 Percent of people also think Artificial Intelligence can help with talking to customers and figuring out prices.

Even though people think Artificial Intelligence is a thing it is hard for them to start using it because it costs a lot of money and it is complicated. Also, some people do not know much about computers and technology.

Most people, about 70 percent said they would be happy to use Artificial Intelligence tools if they were easy to use and not too expensive. They want to use Artificial Intelligence to make their work easier. Artificial Intelligence can be very helpful, for vendors and consumers if it is simple and affordable.

Ultimately, bridging the technology gap requires a collaborative ecosystem involving government support, targeted training programs, and partnerships with technology developers to provide inclusive, scalable solutions. By focusing on tools that support human decision-making rather than replacing it, local markets can modernize their traditional structures without undermining their core cultural and social values. This research serves as a strategic roadmap for policymakers and entrepreneurs to ensure that technological advancement in local markets is both balanced and accessible.