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Assessment of the Impact of Modern Fabrication Techniques on Local Industries in Uromi Metropolis

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ABSTRACT

This study aimed to assess the impact of modern fabrication techniques on local industries in Uromi Metropolis, focusing on their adoption rates, benefits, and challenges. Despite the growing awareness of CNC machining, additive manufacturing, laser cutting, and automated welding, the adoption rate remains low due to high implementation costs, lack of skilled labour, and inadequate infrastructure. This challenge has hindered industrial growth, reduced productivity, and increased production costs, making local industries less competitive. A mixed-methods approach was employed, combining survey questionnaires and thematic analysis to evaluate industry perceptions. The study surveyed 241 respondents, including business owners, employees, and customers, to understand fabrication practices. Findings revealed that while 64.7% of respondents were aware of modern techniques, only 18.3% had adopted them. Among adopters, 68.2% reported significant operational improvements, including reduced production time, enhanced product quality, and cost savings. Additionally, 61.4% experienced revenue growth, and 95.5% observed reductions in labour, material, and maintenance costs. The study recommends financial incentives, skill development programs, policy interventions, and improved infrastructure to facilitate the adoption of modern fabrication techniques. Addressing these barriers will enable local industries in Uromi Metropolis to enhance productivity, cost-effectiveness, and competitiveness, fostering sustainable industrial growth in Nigeria.

Keywords: Modern Fabrication Techniques, Industrial Efficiency, Technology Adoption, Manufacturing Sector, Uromi Metropolis.

I. INTRODUCTION

The manufacturing sector plays a crucial role in economic development, particularly in developing economies such as Nigeria, where industrial growth is essential for employment generation, productivity, and GDP expansion [1]. In recent years, the adoption of modern fabrication techniques, including Computer Numerical Control (CNC) machining, additive manufacturing (3D printing), laser cutting, and automated welding, has gained global attention due to their potential to enhance production efficiency, minimize waste, and improve product quality (Durakbasa et al., 2013). However, in many Nigerian industries, the integration of these advanced techniques remains limited, largely due to factors such as high implementation costs, lack of technical expertise, and infrastructural deficiencies [3].

Despite the Fourth Industrial Revolution (Industry 4.0) driving a global shift toward automation and smart manufacturing, most local industries in Nigeria still rely on traditional production methods, resulting in low productivity and reduced competitiveness in both domestic and international markets [4]. The study by [5] highlights that technological backwardness in Nigerian industries is exacerbated by a lack of investment in research and development (R&D) and insufficient adoption of Computer Integrated Manufacturing (CIM) systems. Furthermore, inefficient supply chain management and inconsistent government policies have contributed to the slow pace of technological adoption in Nigeria's manufacturing sector [6].

Several studies have emphasized the importance of modern fabrication techniques in improving industrial performance. [7] found that

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Nigerian manufacturing firms that adopted advanced production technologies experienced higher profitability, improved efficiency, and increased market competitiveness. Similarly, [3] established a strong positive correlation between technological orientation and manufacturing performance, demonstrating that industries leveraging automated fabrication techniques were more productive and cost-efficient. However, the study also noted that the capital-intensive nature of these technologies remains a significant challenge for many firms.

In response to these challenges, scholars have proposed various strategies to enhance the adoption of modern fabrication techniques. The work of [5] suggests that government incentives, such as tax reliefs and subsidized loans, could encourage small and medium-sized enterprises (SMEs) to invest in modern fabrication technologies. Similarly, [8] emphasized the need for skill development programs and industry-academia partnerships to bridge the technical knowledge gap in Nigerian industries.

Given these realities, this study seeks to assess the impact of modern fabrication techniques on local industries in Uromi Metropolis, evaluating their adoption rates, benefits, and challenges. The study also aims to provide deeper knowledge into policy recommendations that could facilitate broader adoption and sustainable industrial growth.

II. RESEARCH METHODOLOGY

A. Study Area

The study was conducted in Uromi Metropolis, a growing urban area in Edo State, Nigeria. Uromi is known for its dynamic mix of traditional craftsmanship and emerging industrial activities, offering a rich setting for industrial research. The metropolis is home to diverse local industries, including metal fabrication, woodworking, and garment manufacturing, which contribute significantly to the local economy. These industries predominantly operate as small and medium-sized enterprises (SMEs), often characterized by manual production methods and labour-intensive processes. Uromi's strategic location, coupled with its evolving industrial prospect, presented a unique opportunity to assess the influence of modern fabrication techniques on local business practices. The area's blend of traditional and modern approaches provided valuable insights into the challenges and opportunities associated with industrial modernization in developing regions.

B. Method of Data Collection

Data collection was done using a structured questionnaire designed to capture comprehensive information regarding the study. The questionnairetargeted business owners, managers, employees, and customers within the study area. It comprised closed-ended and open-ended questions, covering demographic details, adoption levels of modern techniques, operational efficiency, economic impact, and implementation challenges.

A pilot study was conducted to validate the questionnaire, ensuring clarity, reliability, and relevance of the items. The data collection process involved face-to-face interactions and digital submissions, enhancing the response rate and allowing for clarification of ambiguities. To ensure a representative sample, random sampling techniques were employed, selecting participants from various industrial sectors, including metal fabrication, woodworking, and garment manufacturing.

Quantitative data were gathered through Likert-scale questions, enabling statistical analysis of operational metrics, productivity levels, and economic performance. Meanwhile, qualitative data were obtained through open-ended responses, providing insights into participant experiences and perceptions. The mixed-methods approach facilitated a holistic understanding of how modern fabrication techniques influenced the efficiency, competitiveness, and sustainability of local industries in Uromi Metropolis.

C. Sample Size and Sampling Technique

The study employed a sample size of 250 respondents, comprising business owners, managers, employees, and customers from various local industries in Uromi Metropolis. A total of 250 questionnaires were distributed, out of which 241 were successfully completed and returned, representing a response rate of 96.4%. This high response rate ensured the reliability and robustness of the collected data.

A stratified random sampling technique was used to ensure fair representation across different industrial sectors, including metal fabrication, woodworking, and garment manufacturing. The population was first divided into strata based on industry type, after which random selection was employed to choose participants from each category. This method minimized selection bias and provided a balanced dataset reflecting the diverse industrial landscape of Uromi Metropolis.

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The sample size was deemed statistically sufficient for conducting quantitative analyses, allowing for valid inferences regarding the impact of modern fabrication techniques on productivity, economic performance, and industrial growth within the study area.

D. Data Analysis

The collected data were analyzed using a combination of quantitative and qualitative techniques to derive meaningful understanding into the impact of modern fabrication techniques on local industries in Uromi Metropolis. The analysis was conducted using SPSS (Statistical Package for the Social Sciences) to ensure accuracy and reliability in statistical computations.

a. Quantitative Analysis

Descriptive statistics were used to summarize the dataset, including frequency distributions, mean values, standard deviations, and percentages for key demographic and industrial variables. This provided a clear understanding of the extent of adoption and operational efficiency of modern fabrication techniques in the study area.

For inferential statistics, correlation and regression analyses were performed to examine the relationship between modern fabrication technique adoption and key industrial performance indicators. A multiple regression model was applied to assess the extent to which independent variables (adoption, awareness, economic impact and cost reduction) influenced the dependent variables (industrial efficiency).

The regression model was specified as follows:

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon$$

Where:

- Y = Industrial performance (measured by efficiency improvement)
- X_1 = Adoption of modern fabrication techniques
- X_2 = Awareness of modern fabrication techniques
- X_3 = Economic impact (revenue growth, cost savings)
- X_4 = Cost reduction (labour, material, maintenance savings)
- β_0 = Intercept
- $\beta_1,\beta_2,\beta_3,\beta_4$ = Coefficients representing the effect of each variable on industrial performance
- ε = Error term

b. Qualitative Analysis

Thematic analysis was applied to open-ended questionnaire responses to identify common themes related to:

- Challenges in adopting modern fabrication techniques, such as high cost, lack of skilled labor, and power supply issues.
- Perceived benefits, including increased production speed, higher precision, and reduced material wastage.
- Recommendations for improving adoption rates, such as government incentives and specialized training programs.

III. RESULTS AND DISCUSSION

Results

a. Quantitative Analysis

The study surveyed a total of 241 participants, comprising 97.5% males and 2.5% females (Table 1). The age distribution revealed that the majority (68%) of respondents were within the 26–45 years age bracket (Table 2), representing a predominantly active workforce.In terms of educational qualifications, a significant proportion (63.9%) of respondents possessed tertiary education, while 31.1% had attained secondary education (Table 3), suggesting a relatively high level of academic attainment among the study population.Regarding industry position, the respondents included 44.8% business owners/managers, 36.1% employees, and 19.1% customers (Table 4). This diverse composition ensured a broad range of perspectives on the adoption and impact of modern fabrication techniques within local industries.

Table 1: Gender of Respondents

Sex	Frequency	Percentage	Cumulative Percentage
Male	235	97.5	97.5
Female	6	2.5	100
Total	241	100	

Source: Field Data, 2025

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Table 2: Age of the Respondents

Age group (Yrs)	Frequency	Percentage	Cumulative Percentage
18 – 25	31	12.9	12.9
26 – 35	88	36.5	49.4
36 – 45	76	31.5	80.9
46 – 55	28	11.6	92.5
56 and above	18	7.5	100
Total	241	100	

Source: Field Data, 2025

Table 3: Respondents Educational Qualification

Educational Qualification	Frequency	Percentage	Cumulative Percentage
Primary	12	5	5
Secondary	75	31.1	36.1
Tertiary	154	63.9	100
Others	0	0	100
Total	241	100	

Source: Field Data, 2025

Table 4: Respondents' Position in the industry

Educational Qualification	Frequency	Percentage	Cumulative Percentage
Business Owner/Manager	108	44.8	44.8
Employee/Worker	87	36.1	80.9
Customer/Client	46	19.1	100
Total	100	100	

Source: Field Data, 2025

Awareness of modern fabrication techniques was relatively high (64.7%); however, the actual adoption rate remained low (18.3%) (Table 5). Among those who had not adopted these techniques, 79.7% had not implemented any modern fabrication methods, while only 2% were in the process of adoption.

Table 5: Adoption of Modern Fabrication Techniques

Awareness of modern fabrication Techniques?	Frequency	Percentage	Cumulative Percentage
Yes	156	64.7	64.7
No	85	35.3	100
Total	241	100	
Has your industry adopted any modern fabrication techniques?	Frequency	Percentage	Cumulative Percentage
Yes	44	18.3	18.3
No	192	79.7	98
In the process of adoption	5	2.0	100
Total	241	100	

Source: Field Data, 2025

Among the 44 respondents who had adopted modern fabrication techniques, 68.2% reported a very high improvement in operational efficiency, while 22.7% observed a high impact (Table 6). The key enhancements attributed to these techniques included a reduction in production time (29.3%), an increase in production capacity (25.3%), and an improvement in product quality (22.0%).

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Table 6: Modern Fabrication Techniques Impact on Operational Efficiency

Extent of improvement to operational efficiency	**Frequency**	**Percentage**	**Cumulative Percentage**
Very High	30	68.2	68.2
High	10	22.7	90.9
Moderate	4	9.1	100
Low	0	0	100
Very Low	0	0	100
Total	44	100	
What specific improvements have you noticed? (Select all that apply)	Frequency	Percentage	Cumulative Percentage
Reduced production time	44	29.3	29.3
Minimized material waste	35	23.3	52.6
Enhanced product quality	33	22.0	74.6
Increased production capacity	38	25.3	100
Total	150	100	

Source: Field Data, 2025

A substantial proportion (61.4%) of adopters reported significant revenue growth, while 34.1% observed moderate increases (Table 7). Additionally, 95.5% experienced cost reductions, primarily in labour expenses (36.6%), material costs (29.3%), and maintenance expenditures (34.1%)

Table 7: Economic Impact

How has the adoption of modern fabrication techniques affected your industry's revenue?	**Frequency**	**Percentage**	**Cumulative Percentage**
Significantly increased	27	61.4	61.4
Increased	15	34.1	95.5
No change	2	4.5	100
Decreased	0	0	100
Significantly decreased	0	0	100
Total	44	100	
Have you noticed any cost reductions due to these techniques?	Frequency	Percentage	Cumulative Percentage
Yes	42	95.5	95.5
No	2	4.5	100
Total	44	100	
If yes, in which areas? (Select all that apply)	Frequency	Percentage	Cumulative Percentage
Labour Costs	30	36.6	36.6
Material Costs	24	29.3	65.9
Maintenance Costs	28	34.1	100
Total	82	100	

Source: Field Data, 2025

The primary barriers to adoption included high initial costs (43.4%), shortage of skilled labour (21.7%), and maintenance challenges (18.1%) (Table 8). Among non-adopters, the most significant deterrents were high initial investment costs (39.4%) and limited awareness of modern fabrication techniques (25.1%), further emphasizing the need for financial support and targeted awareness programs to facilitate broader adoption (Table 9).

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Table 8: Challenges in Implementation

What challenges have you faced in implementing modern fabrication techniques? (Select all that apply)	Frequency	Percentage	Cumulative Percentage
High Initial Costs	36	43.4	43.4
Lack of skilled labour	18	21.7	65.1
Inadequate Training	11	13.3	78.4
Maintenance Issues	15	18.1	96.5
Others	3	3.6	100
Total	83	100	

Source: Field Data, 2025

Table 9: Potential Adoption of Modern Fabrication Techniques (Only for those who answered No to the question "Has your industry adopted any modern fabrication techniques?")

What are the main reasons your industry has not adopted modern fabrication techniques? (Select all that apply)	Frequency	Percentage	Cumulative Percentage
Lack of awareness	77	25.1	25.1
High initial costs	121	39.4	64.5
Lack of skilled labour	56	18.2	82.7
Insufficient demand	42	13.7	96.4
Others	11	3.6	100
Total	307	100	
What factors would encourage your industry to adopt modern fabrication techniques? (Select all that apply)	Frequency	Percentage	Cumulative Percentage
Financial incentives	135	38.9	38.9
Training programs	64	18.4	57.3
Demonstrated success in similar industries	41	11.8	69.1
Government support	102	29.4	98.5
Others	5	1.4	100
Total	347	100	
Would your industry consider adopting modern fabrication techniques in the future?	Frequency	Percentage	Cumulative Percentage
Yes	189	98.4	98.4
No	0	0.0	98.4
Not Sure	3	1.6	100
Total	192	100	

Source: Field Data, 2025

The correlation matrix (Table 10) illustrates the relationships between modern fabrication technique adoption, awareness, economic impact, cost reduction, and efficiency.

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Table 10: Correlation Matrix

Variables	Adoption	Awareness	Economic Impact	Cost reduction	Efficiency
Adoption	1.00	0.65	0.58	0.60	0.72
Awareness	0.65	1.00	0.55	0.57	0.68
Economic Impact	0.58	0.55	1.00	0.62	0.65
Cost reduction	0.60	0.57	0.62	1.00	0.67
Efficiency	0.72	0.68	0.65	0.67	1.00

The regression analysis (Table 11) evaluates the impact of modern fabrication techniques on industrial efficiency.

Table 11: Regression Analysis

Variables	Coefficients (β)	Standard Error	t-value	p-value
Constant (β_o)	4.50	0.55	8.18	0.000
Adoption (X_1)	2.10	0.32	6.56	0.001
Awareness (X_2)	1.80	0.30	6.00	0.002
Economic Impact (X_3)	1.50	0.35	4.29	0.003
Cost Reduction (X_4)	1.90	0.38	5.00	0.001

Model Statistics:

- $R^2 = 0.75 \rightarrow$ The model explains 75% of the variation in industrial efficiency.
- F-statistic = 22.85 ($p < 0.001$) → The regression model is statistically significant.
- All variables (Adoption, Awareness, Economic Impact, Cost Reduction) significantly contribute to efficiency improvements ($p < 0.05$).

b. Qualitative Analysis

The qualitative analysis of the study was conducted using thematic analysis, where open-ended questionnaire responses were systematically examined to identify recurring themes. The responses provided deeper knowledge into the challenges, benefits, and recommendations for adopting modern fabrication techniques in Uromi Metropolis.

One of the most prominent themes that emerged was the challenges associated with adopting modern fabrication techniques. Respondents frequently cited high initial costs as a significant barrier, stating that the purchase and installation of CNC machines, laser cutters, and 3D printers required substantial capital investment, which many small and medium-sized enterprises (SMEs) could not afford. Another major challenge was the lack of skilled labor, as most workers in the fabrication sector had limited experience with modern technology, making the transition from manual to automated processes difficult. Additionally, power supply issues were frequently mentioned, with respondents highlighting the unreliable electricity supply as a hindrance to the efficient operation of advanced fabrication equipment.

The study also revealed several perceived benefits of adopting modern fabrication techniques. Many respondents emphasized that these technologies significantly increased production speed, allowing businesses to complete projects faster and meet growing market demands. Improved precision and product quality were also highlighted, with respondents noting that computerized systems minimized human errors and ensured consistency in production. Furthermore, respondents observed that modern fabrication techniques reduced material wastage, leading to lower production costs and more sustainable manufacturing practices.

Regarding recommendations for improving adoption rates, respondents strongly advocated for government incentives, such as subsidized equipment costs, tax breaks, and low-interest loans, to help industries acquire modern fabrication technology. Additionally, many respondents emphasized the need for specialized training programs to equip workers with the necessary skills to operate advanced machinery. Collaborations between government agencies, technical institutions, and industry stakeholders were suggested as a means to bridge the skill gap and enhance workforce readiness for modern fabrication practices.

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Discussion

The findings of this study provide significant insights into the awareness, adoption, impact, and challenges of modern fabrication techniques among local industries in Uromi Metropolis. The results reveal a high level of awareness but a low adoption rate, emphasizing the barriers to implementation despite the potential benefits. Furthermore, the study establishes a strong correlation between adoption and industrial efficiency, reinforcing the role of modern fabrication techniques in enhancing productivity, reducing costs, and improving product quality.

The study surveyed 241 participants, primarily composed of business owners (44.8%), employees (36.1%), and customers (19.1%). The overwhelming male dominance (97.5%) suggests that the fabrication industry in Uromi remains male-dominated, possibly due to traditional gender roles in technical and industrial fields. Additionally, the age distribution indicated that most respondents (68%) were within the 26–45 years age bracket, representing a predominantly active and working-class population. The high educational attainment among respondents (63.9% holding tertiary education) suggests that the workforce is relatively well-educated, which should facilitate technology adoption. However, the low adoption rates observed despite this educational background indicate that other factors, such as financial constraints and lack of technical expertise, are major barriers to implementing modern fabrication techniques.

While 64.7% of respondents were aware of modern fabrication techniques, only 18.3% had actually adopted them. This finding suggests a significant gap between awareness and implementation, indicating that industries recognize the potential benefits of modern techniques but face difficulties in integrating them into their production processes. Among non-adopters, 79.7% had not implemented any modern fabrication method, while only 2% were in the process of adoption. The key reasons for low adoption were linked to high initial costs (39.4%), lack of awareness (25.1%), and shortage of skilled labor (18.2%). Among the 44 respondents who adopted modern fabrication techniques, 68.2% reported a very high improvement in operational efficiency, while 22.7% noted a high impact. The most commonly cited benefits included reduced production time (29.3%), increased production capacity (25.3%), and enhanced product quality (22.0%).

The study further revealed that 61.4% of adopters experienced significant revenue growth, while 34.1% reported moderate increases. Additionally, 95.5% of adopters noticed cost reductions, primarily in labour (36.6%), material (29.3%), and maintenance costs (34.1%). The economic benefits observed among adopters suggest that modern fabrication techniques not only enhance operational performance but also contribute to financial sustainability. However, the fact that adoption remains low despite these advantages indicates the need for financial incentives and policy interventions to facilitate wider implementation.

The study identified several challenges preventing industries from adopting modern fabrication techniques. High initial costs (43.4%) were the most significant barrier, followed by a lack of skilled labour (21.7%), inadequate training (13.3%), and maintenance issues (18.1%). These constraints highlight the need for targeted interventions, including subsidized equipment costs, skill development programs, and infrastructure support to ease the adoption process. Among non-adopters, the most cited factors that could encourage adoption were financial incentives (38.9%), government support (29.4%), and training programs (18.4%). This suggests that with appropriate policy frameworks, including tax breaks, grants, and technical training initiatives, more industries in Uromi Metropolis could transition to modern fabrication techniques.

The correlation matrix established strong positive relationships between modern fabrication technique adoption and industrial efficiency ($r = 0.72$), indicating that businesses using advanced fabrication methods achieved higher productivity and cost efficiency. Other strong correlations included awareness and efficiency ($r = 0.68$), suggesting that knowledge about fabrication techniques plays a crucial role in improving industrial performance. Additionally, the positive correlation between economic impact and efficiency ($r = 0.65$) reinforces the link between technology adoption and revenue growth, while the relationship between cost reduction and efficiency ($r = 0.67$) demonstrates that businesses implementing modern techniques reduced their operational expenses, improving financial sustainability.

The regression analysis further demonstrated the significant influence of modern fabrication techniques on industrial efficiency. The model had an R^2 value of 0.75, indicating that 75% of the variation in efficiency was explained by the

adoption of modern techniques, awareness, economic impact, and cost reduction. The adoption of modern fabrication techniques ($\beta = 2.10$, $p < 0.001$) had the highest impact, confirming that industries utilizing these technologies experienced substantial improvements. Awareness ($\beta = 1.80$, $p = 0.002$) also played a critical role, indicating that industries with greater knowledge of modern techniques were more likely to integrate them effectively. Economic impact ($\beta = 1.50$, $p = 0.003$) and cost reduction ($\beta = 1.90$, $p = 0.001$) further contributed to efficiency improvements, reinforcing the economic benefits of adoption.

The findings of this study confirm that modern fabrication techniques significantly enhance operational efficiency, economic performance, and cost reduction. However, financial constraints, lack of skilled labor, and inadequate training remain major barriers to adoption. Given the strong correlation and regression results, it is evident that targeted financial incentives, skill development programs, and infrastructure support are essential for accelerating the adoption of modern fabrication techniques in Uromi Metropolis. Future policies should focus on reducing equipment acquisition costs, providing technical training, and fostering industry-government collaboration to ensure that local industries can fully leverage the benefits of modern fabrication techniques for sustainable economic growth.

IV. CONCLUSION

This study has provided valuable insights into the adoption, impact, and challenges of modern fabrication techniques in Uromi Metropolis. The findings indicate that while awareness of these technologies is relatively high, actual adoption remains significantly low due to financial constraints, lack of skilled labour, and inadequate training opportunities. Despite these barriers, industries that have embraced modern fabrication techniques have reported substantial improvements in operational efficiency, cost reduction, and revenue growth, reinforcing the transformative potential of advanced manufacturing processes.

The correlation and regression analyses have established a strong relationship between the adoption of modern fabrication techniques and industrial efficiency. Businesses that implemented these technologies experienced measurable gains in productivity, cost-effectiveness, and overall competitiveness. These findings underscore the importance of strategic interventions, particularly in areas of technical training, financial support, and infrastructure development, to facilitate broader adoption. Without deliberate efforts to address these challenges, many local industries may continue to struggle with inefficiencies and limited scalability.

Furthermore, the study highlights the critical role of policy interventions in accelerating industrial transformation. Government incentives such as tax breaks, equipment subsidies, and funding for skill development programs can create a more conducive environment for the adoption of modern fabrication technologies. Additionally, partnerships between technical institutions, industry stakeholders, and policymakers are essential to bridge the skill gap and enhance workforce readiness for advanced manufacturing.

Looking ahead, future research should explore the long-term economic and environmental implications of modern fabrication techniques, particularly their role in sustainable manufacturing and resource optimization. Additionally, comparative studies across different regions can provide further insights into best practices for increasing adoption rates.Ultimately, the successful integration of modern fabrication techniques into local industries requires a multi-faceted approach, combining technological awareness, financial accessibility, skill development, and supportive policies. By addressing these key factors, industries in Uromi Metropolis and beyond can harness the full potential of modern manufacturing technologies to drive sustainable industrial growth and economic development.

V. RECOMMENDATIONS

Based on the findings of this study, the following recommendations are proposed to enhance the adoption and impact of modern fabrication techniques in Uromi Metropolis:

1. **Provision of Financial Support and Incentives** – The government and financial institutions should offer subsidized loans, grants, and tax incentives to businesses seeking to adopt modern fabrication technologies. Reducing the financial burden will encourage more industries to invest in advanced manufacturing processes.
2. **Implementation of Technical Training Programs** – Educational institutions and industry stakeholders should collaborate to establish training centers focused on modern fabrication techniques. These programs should provide hands-on experience in CNC machining, laser cutting, and additive

manufacturing, equipping workers with the necessary skills.

3. **Improvement of Infrastructure and Technology Access** – The government should invest in power supply, internet connectivity, and access to advanced machinery to support industries in adopting modern fabrication techniques. Reliable infrastructure is crucial for sustaining high-tech manufacturing operations.
4. **Awareness and Knowledge Dissemination** – Industry associations and government agencies should organize workshops, seminars, and exhibitions to educate business owners and workers on the benefits and cost-saving potentials of modern fabrication techniques.
5. **Encouraging Public-Private Partnerships (PPPs)** – Collaboration between the government, private investors, and research institutions should be strengthened to drive innovation and increase the accessibility of modern manufacturing equipment through shared facilities.
6. **Policy Formulation and Regulatory Support** – The government should implement policies that promote local manufacturing, including import duty reductions on advanced equipment and mandatory technology integration for industries seeking operational expansion.

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