Journal of Information Systems Engineering and Management
2024, 9(4s)
e-ISSN: 2468-4376
https://www.jisem-journal.com/

Research Article

An Analytical Study of the Problems and Prospects of Jaipur Blue Pottery

[1]Dr. Garima Mishra, [2]Durgesh Doraya
[1]*Supervisor, Assistant Professor Department of Commerce & Management Apex University, Jaipur*
[2]*Research Scholar Department of Commerce & Management Apex University, Jaipur*

ARTICLE INFO

Received: 08 Oct 2024
Revised: 22 Nov 2024
Accepted: 28 Dec 2024

ABSTRACT

Jaipur Blue Pottery represents a distinctive ceramic art form characterized by its cobalt blue glaze and intricate designs, originating from Central Asia and flourishing in Jaipur, Rajasthan since the 19th century. Despite its cultural significance and unique production techniques using quartz powder, glass and Multani mitti instead of traditional clay, the craft faces numerous challenges threatening its sustainability. This descriptive and analytical study examined 200 blue pottery artisans across four major production clusters in Jaipur district: Kot Jewer, Neota, Sanganer and Amer, with 50 artisans selected from each location. Data were collected through structured interviews using a comprehensive questionnaire covering demographic characteristics, economic conditions, production problems, marketing challenges and future prospects. Statistical analysis employed frequency distributions, chi-square tests, one-way ANOVA and reliability testing with Cronbach's alpha values of 0.847 for problem dimensions and 0.905 for prospect dimensions, indicating excellent internal consistency. The study revealed that 84% of artisans entered the craft after age 18, with 37.5% in the 20-30 age group and 31.5% in the 30-40 age group. Major problems identified included inadequate supply of raw materials (mean 3.59), inferior material quality (mean 3.78), use of traditional tools (mean 3.75), lack of infrastructure (mean 3.66) and high production costs (mean 3.59). Financial constraints were significant, with lack of adequate and timely finance scoring highest (mean 3.86), high interest rates (mean 3.65) and shortage of working capital (mean 3.71). ANOVA results showed no significant differences in financial problems ($F=0.835$, $p=0.476$), production problems ($F=0.379$, $p=0.768$), marketing problems ($F=0.508$, $p=0.677$), transportation problems ($F=1.498$, $p=0.217$) or environmental problems ($F=1.031$, $p=0.380$) across the four areas, indicating uniform challenges throughout the region. However, significant differences were found in investment behavior ($\chi^2=28.710$, $p=0.018$) and borrowed amounts ($\chi^2=21.401$, $p=0.045$), suggesting varying financial awareness and institutional access. While Jaipur Blue Pottery faces formidable sustainability challenges including financial constraints, outdated production techniques, inadequate marketing systems and competition from mass-produced goods, significant prospects exist through skill development programs, technological integration, product diversification, enhanced branding strategies, e-commerce adoption and strengthened policy support. The craft's alignment with growing global demand for handcrafted, environmentally-friendly products presents unique revitalization opportunities.

Keywords: Jaipur Blue Pottery, traditional crafts, artisan challenges, sustainable development, handicraft industry, Rajasthan heritage, production problems, marketing strategies.

Journal of Information Systems Engineering and Management
2024, 9(4s)
e-ISSN: 2468-4376
https://www.jisem-journal.com/

Research Article

INTRODUCTION

Jaipur Blue Pottery stands as a hallmark of Rajasthan's rich artistic heritage, representing an intricate fusion of Persian aesthetics and Indian craftsmanship that has flourished for centuries. This distinctive ceramic art form, characterized by its striking cobalt blue glaze against a delicate white background, originated in Central Asia and was introduced to India during the Mughal period, particularly during the reign of Maharaja Ram Singh II of Jaipur in the 19th century. The craft's uniqueness extends beyond its aesthetic appeal to its innovative production process, which distinguishes it from conventional pottery by using a composition of quartz stone powder, powdered glass, Multani Mitti, borax, gum and water instead of traditional clay. This composition results in the signature semi-transparent finish that sets Jaipur Blue Pottery apart from other ceramic traditions worldwide.

The historical journey of blue pottery reflects remarkable cultural exchange and adaptation across civilizations. The technique evolved from early discoveries in ancient Egypt, Syria, Iran and the Indus Valley, where artisans observed that alkaline soil combined with copper and heated produced stunning turquoise blue colors. During the Yuan period in China, Muslim merchants introduced cobalt oxide, revolutionizing ceramic production and creating the iconic blue and white porcelain that became highly valued across the Middle East and Europe. Shah Abbas of Iran attempted to rival Chinese porcelain production in the late 16th century by inviting Chinese potters, but due to unsuitable Iranian soil, artisans innovated by using stone instead of clay, creating what became known as blue pottery. This technique traveled through Afghanistan to Indian cities including Multan, Lahore, Delhi and eventually Jaipur, where it was indigenized with local motifs depicting animals, Hindu deities, human figures and architectural elements from Indian palaces.

Despite its cultural significance and international acclaim, Jaipur Blue Pottery faces a complex landscape of challenges that threaten its survival in the modern era. The craft has struggled to compete with mass-produced alternatives that flood markets with cheaper, less authentic products, leading to declining demand and threatening artisan livelihoods. The number of skilled craftspeople has dwindled as younger generations, attracted by more lucrative and less labor-intensive professions, show reluctance in adopting this ancestral craft, creating significant skills gaps and raising concerns about long-term sustainability. Additional challenges include sourcing traditional raw materials that have become scarce or expensive, adapting to changing consumer preferences while maintaining authenticity, inadequate marketing systems that limit domestic market reach and financial constraints that prevent investment in materials, tools and technology.

However, promising prospects exist for the revival and growth of Jaipur Blue Pottery. A global resurgence of interest in artisanal and handcrafted products has created new markets, as consumers increasingly value authenticity, sustainability and cultural significance in their purchases. Government bodies have implemented schemes providing financial assistance, training programs and marketing support to artisans, while non-governmental organizations have organized workshops and created platforms for showcasing work. Design interventions through collaborations between traditional artisans and contemporary designers have resulted in innovative products blending age-old techniques with modern aesthetics, appealing to broader consumer bases. E-commerce platforms and social media have opened new marketing avenues, enabling artisans to reach global audiences directly while increasing awareness about the craft's cultural significance.

OBJECTIVES

- To identify the demographical factors of the artisans in selected four areas of Jaipur district.
- To identify the economic factors of the artisans in selected four areas of Jaipur district.
- To analyse the problems of blue pottery artisans in selected four areas of Jaipur district.
- To analyse the prospects of blue pottery artisans in selected four areas of Jaipur district.

METHODOLOGY

This research employed a descriptive and analytical design to comprehensively examine challenges confronting blue pottery artisans in Jaipur district. The study focused on four strategically selected locations representing diverse aspects of the blue pottery ecosystem: Kot Jewer, Neota, Sanganer and Amer, each offering unique insights into traditional practices, market dynamics and contemporary challenges. Jaipur, positioned at 26.9124°N latitude and

Journal of Information Systems Engineering and Management
2024, 9(4s)
e-ISSN: 2468-4376
https://www.jisem-journal.com/

Research Article

75.7873°E longitude at an elevation of approximately 431 meters above sea level, serves as the capital of Rajasthan state in northwestern India. The city is enclosed by the Aravalli Hills on three sides, with the Dravyavati River serving as the primary drainage system. The study adopted a hybrid sampling approach combining convenience sampling and stratified random sampling techniques. The population was stratified based on location, with each area treated as a distinct subgroup to capture unique socio-economic and operational characteristics. Within each stratum, random sampling minimized bias, ensuring equal selection probability for all artisans, while convenience sampling addressed field access variability by identifying available, willing participants. To maintain mathematical simplicity and enable balanced comparative analysis, the sample was equally distributed with 50 artisans selected from each location, totaling 200 artisans.

Research Instrument

A comprehensive structured interview schedule was developed encompassing three interconnected sections. Part A: General Information established detailed demographic profiles through 18 questions covering age distribution, gender, religious affiliation, family structure, educational attainment, nativity status, craft familiarity and introduction methods, while the Economic Characteristics section included 9 questions related to household income, earning members, housing status, financial investments, debt status and borrowing sources. Part B: Problems adopted a categorical approach addressing five critical areas through 51 statements measured on a 5-point Likert scale: financial problems (8 statements), production problems (21 statements), marketing problems (13 statements), transportation problems (5 statements) and environmental problems (4 statements). Part C: Prospects encompassed 64 statements across seven sub-sections evaluating current market status, adequate finance assistance, subsidies and grants, new marketing strategies, innovation and modernization, future prospects and challenges and solutions.

Reliability and Validity

A pilot study involving 40 artisans was conducted to test instrument effectiveness, clarity and reliability. Reliability analysis using Cronbach's alpha yielded 0.847 for overall problem dimensions (51 items) and 0.905 for overall prospect dimensions (64 items), indicating excellent internal consistency and confirming the questionnaire's reliability. Modifications based on pilot feedback improved question sequencing, simplified complex terms and removed overlapping items.

Hypotheses Formulation

Based on research objectives, four sets of hypotheses were developed.

H_{o1} : There is no significant difference in the demographic characteristics of blue pottery artisans across the selected four areas of Jaipur district.

H_{a1} : There is a significant difference in the demographic characteristics of blue pottery artisans across the selected four areas of Jaipur district.

H_{o2} : There is no significant difference in the Economic Conditions of blue pottery artisans across the selected four areas of Jaipur district.

H_{a2} : There is a significant difference in the Economic Conditions of blue pottery artisans across the selected four areas of Jaipur district.

H_{o3} : There is no significant difference in the Problems of blue pottery artisans across the selected four areas of Jaipur district.

H_{a3} : There is no significant difference in the Problems of blue pottery artisans across the selected four areas of Jaipur district.

H_{o4} : There is no significant difference in the Prospects of blue pottery artisans across the selected four areas of Jaipur district.

H_{a4} : There is no significant difference in the Prospects of blue pottery artisans across the selected four areas of Jaipur district.

Journal of Information Systems Engineering and Management
2024, 9(4s)
e-ISSN: 2468-4376
https://www.jisem-journal.com/

Research Article

Data analysis employed SPSS version 23.0 using frequency analysis, descriptive statistics, cross-tabulation with chi-square tests, independent t-tests, one-way ANOVA and factor analysis. Frequency analysis provided insights into category distributions within the dataset, while descriptive analysis calculated measures of central tendency and dispersion. Cross-tabulation organized categorical variable relationships, with chi-square tests assessing statistical significance. One-way ANOVA determined whether significant differences existed between group means across the four locations, with post-hoc tests identifying specific group differences when overall tests were significant.

RESULTS

Demographic Characteristics of Artisans

The demographic analysis revealed comprehensive profiles of the 200 artisans across the four study locations. Table 1 presents the age distribution, showing that the dominant age group was 20-30 years, comprising 37.5% of respondents (75 artisans), followed by 30-40 years at 31.5% (63 artisans), indicating a relatively young workforce. The 40-50 years category represented 19.5% (39 artisans), while those above 50 years constituted only 10.0% (20 artisans) and those below 20 years were minimal at 1.5% (3 artisans). Chi-square analysis showed no significant differences in age distribution across the four areas (χ^2=10.505, p=0.572), suggesting uniform age structures that could facilitate knowledge transfer and collaborative industry development. Gender distribution analysis revealed a male-dominated industry with 152 males (76.0%) compared to 48 females (24.0%). Kot Jewer had the highest female representation at 30.0%, while Neota had the lowest at 20.0%. The chi-square statistic of 1.535 (p=0.674) indicated no statistically significant gender differences across the areas, underscoring a consistent gender imbalance that may reflect traditional roles in the craft. Educational attainment analysis showeds that secondary school education was most common at 30.0% (60 artisans), closely followed by higher secondary at 26.5% (53 artisans), while illiteracy remained low at 5.0% (10 artisans), indicating some basic access to schooling. Higher education levels including undergraduate (16.0%) and postgraduate (3.0%) were limited but varied by area, with Sanganer showing the highest undergraduate rate at 26.0%. The chi-square value of 13.504 (p=0.563) confirmed no significant educational differences across the areas. Regarding entry into the craft, a dominant 84.0% (168 artisans) began their involvement after age 18, with 11.0% (22 artisans) entering between 15-18 years and only 5.0% (10 artisans) below 15 years. Sanganer showed the highest above-18 entry rate at 90.0% with no below-15 entries, suggesting stricter age norms or better educational access, while Kot Jewer and Neota each had 8.0% below-15 entries, potentially reflecting earlier family involvement in rural settings. The chi-square value of 6.751 (p=0.345) confirmed no significant differences across areas, implying consistent entry age trends supporting industry stability through adult participation. The primary source of skill acquisition was family tradition at 72.5% (145 artisans), followed by exhibitions at 15.0% (30 artisans), other sources at 10.0% (20 artisans) and social media at a minimal 2.5% (5 artisans), reflecting the craft's reliance on generational knowledge transfer.

H_{o1} : There is no significant difference in the demographic characteristics of blue pottery artisans across the selected four areas of Jaipur district.

H_{a1} : There is a significant difference in the demographic characteristics of blue pottery artisans across the selected four areas of Jaipur district.

Analysis of demographic variables including age, gender, religion, family type, educational level, native status, familiarity with craft, learning sources, occupation period, age of entry, training participation, and working hours showed no statistically significant differences across the four areas, with all chi-square p-values exceeding the 0.05 threshold. Therefore, the null hypothesis H01 was accepted, confirming that there is no significant difference in the demographic characteristics of blue pottery artisans across the four selected areas of Jaipur district.

Economic Conditions of Artisans

Economic profile analysis revealed that the majority of artisan households (70.5%, 141 households) had two earning members, while 11.5% (23 households) relied on a single earner and 17.5% (35 households) had three earning members, with only 0.5% (1 household) having more than three earners. The chi-square test (χ^2=7.232, p=0.613) confirmed no significant difference among the four study areas, meaning household earning patterns remained broadly consistent across locations. Annual income distribution showed that the majority of artisans (44.5%, 89

Journal of Information Systems Engineering and Management
2024, 9(4s)
e-ISSN: 2468-4376
https://www.jisem-journal.com/

Research Article

artisans) fell within the 1-5 lakh range, indicating modest earnings typical of small-scale craft-based occupations. About 24.0% (48 artisans) earned 5-10 lakhs, 17.5% (35 artisans) fell in the 10-15 lakh range, 13.0% (26 artisans) earned more than 15 lakhs and only 1.0% (2 artisans) earned below 1 lakh. Despite these income level differences, the chi-square test (χ^2=18.644, p=0.097) showed no significant regional variation. Housing status analysis showed that 64.0% (128 artisans) lived in rented homes, while only 36.0% (72 artisans) owned their houses, indicating predominance of rental dependence reflecting financial constraints and limited long-term security. Investment behavior analysis revealed that bank savings was the most common method used by 63.0% (126 artisans), followed by fixed deposits at 21.5% (43 artisans), private chit funds at 6.0% (12 artisans), insurance policies at 5.5% (11 artisans) and lending money for interest at 2.0% (4 artisans). The chi-square test (χ^2=28.710, p=0.018) showed a significant difference in investment patterns across areas, suggesting that financial awareness, access to institutions and saving behavior differed notably among regions. Debt status analysis indicated that 65.5% (131 artisans) were not in debt, while 34.5% (69 artisans) had taken loans or owed money. Among borrowers, banks were the primary source used by 15.0% (30 artisans), followed by cooperative societies at 6.5% (13 artisans), NGOs at 5.5% (11 artisans) and friends at 5.5% (11 artisans). Borrowed amounts showed that most loans fell within smaller amounts: below 1 lakh (15.0%, 30 artisans) and 1-2 lakhs (16.5%, 33 artisans), with only very small shares borrowing 2-3 lakhs (1.0%, 2 artisans) and above 3 lakhs (2.0%, 4 artisans). The chi-square result (χ^2=21.401, p=0.045) indicated a significant difference in borrowed amounts across the four areas, suggesting that financial needs, borrowing capacity, or lender availability varied meaningfully between regions.

H_{o2} : There is no significant difference in the Economic Conditions of blue pottery artisans across the selected four areas of Jaipur district.

H_{a2} : There is a significant difference in the Economic Conditions of blue pottery artisans across the selected four areas of Jaipur district.

Assessment of economic indicators showed that while many core variables including earning members, annual income, housing status, debt status and borrowing sources did not differ significantly across areas, two important aspects - investment behavior (p=0.018) and borrowed amounts (p=0.045) revealed significant regional variations. Therefore, the null hypothesis H02 was rejected and the alternative hypothesis Ha2 was accepted, indicating that significant differences do exist in the economic conditions of blue pottery artisans across the four selected areas.

PROBLEMS FACED BY ARTISANS

1. Financial Problems

Financial constraints emerged as critical challenges affecting artisan sustainability. Table 3 presents comprehensive statistics on financial problems showing that artisans overwhelmingly agreed or strongly agreed with statements. Group statistics for financial problems across the four areas showed closely clustered mean scores: Kot Jewer (mean 3.7025, SD 0.33013), Neota (mean 3.7600, SD 0.27875), Sanganer (mean 3.7075, SD 0.32597) and Amer (mean 3.6600, SD 0.33028), with an overall mean of 3.7075. ANOVA results demonstrated no significant difference in financial problems across the four selected areas (F=0.835, p=0.476), with mean scores ranging narrowly from 3.66 to 3.76. This uniformity indicated that financial difficulties were widespread sector-wide challenges rather than location-specific issues, requiring comprehensive policy interventions addressing credit access, interest rate subsidies and income stabilization mechanisms.

Table 1: Group Statistics of Financial Problems

	N	Mean	SD	95% CI for Mean		Minimum	Maximum
				Lower Bound	Upper Bound		
Kot Jewer	50	3.7025	.33013	3.6087	3.7963	2.88	4.38
Neota	50	3.7600	.27875	3.6808	3.8392	3.25	4.38

Journal of Information Systems Engineering and Management
2024, 9(4s)
e-ISSN: 2468-4376
https://www.jisem-journal.com/

Research Article

Sanganer	50	3.7075	.32597	3.6149	3.8001	3.00	4.38
Amer	50	3.6600	.33028	3.5661	3.7539	2.75	4.25
Total	200	3.7075	.31663	3.6633	3.7517	2.75	4.38

$H_0$3a : There is no significant difference in the Financial Problems of blue pottery artisans across the selected four areas of Jaipur district.

H_a3a : There is significant difference in the Financial Problems of blue pottery artisans across the selected four areas of Jaipur district.

Table 2: ANOVA table of Financial Problems

ANOVA					
	Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Between Groups	.252	3	.084	.835	.476
Within Groups	19.699	196	.101		
Total	19.951	199			

The ANOVA results (F=0.835, p=0.476) confirmed no statistically significant difference in financial problems experienced by artisans across the four locations. Therefore, the null hypothesis H03a was accepted, establishing that financial challenges are systematic and widespread across the entire blue pottery community rather than localized issues.

2. Production Problems

Production-related challenges represented the most extensive problem category with 21 identified issues. Group statistics for production problems showed mean scores: Kot Jewer (mean 3.6333, SD 0.31766), Neota (mean 3.6789, SD 0.25454), Sanganer (mean 3.6811, SD 0.24764) and Amer (mean 3.6600, SD 0.17734), with an overall mean of 3.6633. ANOVA analysis revealed no significant differences in production problems across the four areas (F=0.379, p=0.768), with means ranging from 3.63 to 3.68, confirming that production difficulties were uniform and sector-wide rather than location-specific.

Table 3: Group Statistics of Production Problems

	N	**Mean**	**SD**	**95% CI for Mean**		**Minimum**	**Maximum**
				Lower Bound	**Upper Bound**		
Kot Jewer	50	3.6333	.31766	3.5431	3.7236	2.67	4.11
Neota	50	3.6789	.25454	3.6066	3.7512	3.11	4.28
Sanganer	50	3.6811	.24764	3.6107	3.7515	3.00	4.33
Amer	50	3.6600	.17734	3.6096	3.7104	3.28	4.00
Total	200	3.6633	.25301	3.6281	3.6986	2.67	4.33

$H_0$3b : There is no significant difference in the Production related Problems of blue pottery artisans across the selected four areas of Jaipur district.

Journal of Information Systems Engineering and Management
2024, 9(4s)
e-ISSN: 2468-4376
https://www.jisem-journal.com/

Research Article

H_a3b : There is significant difference in the Production related Problems of blue pottery artisans across the selected four areas of Jaipur district.

Table 4: ANOVA Results for Production Problems

ANOVA					
	Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Between Groups	.073	3	.024	.379	.768
Within Groups	12.665	196	.065		
Total	12.739	199			

The ANOVA results (F=0.379, p=0.768) indicated that variations observed in mean scores for production issues were not statistically significant. Therefore, the null hypothesis H03b was accepted, confirming that production difficulties are uniform across locations and not influenced by geographic differences.

Marketing Problems

Marketing challenges significantly constrained artisan market access and income generation. Artisans reported fluctuating demand patterns, intense competition from mass-produced goods, inadequate advertising and promotion, limited understanding of customer preferences and insufficient showroom availability. The underdeveloped marketing infrastructure forced heavy reliance on intermediaries and exporters, limiting direct consumer engagement and reducing profit margins.

Table 5: Group Statistics of Marketing related Problems

	N	**Mean**	**SD**	**95% CI for Mean**		**Minimum**	**Maximum**
				Lower Bound	**Upper Bound**		
Kot Jewer	50	3.6431	.29599	3.5590	3.7272	2.92	4.15
Neota	50	3.6431	.28646	3.5617	3.7245	2.85	4.08
Sanganer	50	3.6785	.33175	3.5842	3.7727	2.69	4.38
Amer	50	3.7062	.29800	3.6215	3.7908	2.92	4.23
Total	200	3.6677	.30241	3.6255	3.7099	2.69	4.38

H_o3c : There is no significant difference in the Marketing related Problems of blue pottery artisans across the selected four areas of Jaipur district.

H_a3c : There is significant difference in the Marketing related Problems of blue pottery artisans across the selected four areas of Jaipur district.

Table 6: ANOVA table of Marketing related Problems

ANOVA					
	Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Between Groups	.140	3	.047	.508	.677
Within Groups	18.058	196	.092		
Total	18.198	199			

ANOVA results showed no significant differences in marketing problems across locations (F=0.508, p=0.677), indicating consistent marketing difficulties throughout the sector requiring integrated promotional strategies, digital platform adoption and direct market linkages.

Transportation Problems

Journal of Information Systems Engineering and Management
2024, 9(4s)
e-ISSN: 2468-4376
https://www.jisem-journal.com/

Research Article

Transportation challenges included high transport costs (mean 3.83, SD 0.821), possibility of loss (mean 3.50, SD 1.116), defective transport systems (mean 3.67, SD 1.014), unsuited packing (mean 3.73, SD 0.982) and absence of owned vehicles (mean 3.69, SD 1.040), creating additional operational burdens. Group statistics showed mean scores: Kot Jewer (3.7440), Neota (3.6480), Sanganer (3.5920) and Amer (3.7400).

Table 7: Group Statistics of Transportation related Problems

	N	Mean	SD	95% CI for Mean		Minimum	Maximum
				Lower Bound	Upper Bound		
Kot Jewer	50	3.7440	.44820	3.6166	3.8714	2.60	4.60
Neota	50	3.6480	.43624	3.5240	3.7720	2.60	4.40
Sanganer	50	3.5920	.37244	3.4862	3.6978	2.80	4.20
Amer	50	3.7400	.45040	3.6120	3.8680	2.60	4.40
Total	200	3.6810	.42961	3.6211	3.7409	2.60	4.60

H_o3d : There is no significant difference in the Transportation related Problems of blue pottery artisans across the selected four areas of Jaipur district.

H_a3d : There is no significant difference in the Transportation related Problems of blue pottery artisans across the selected four areas of Jaipur district.

Table 8: ANOVA table of Transportation related Problems

ANOVA					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.823	3	.274	1.498	.217
Within Groups	35.905	196	.183		
Total	36.728	199			

ANOVA analysis confirmed no significant differences across areas for transportation problems (F=1.498, p=0.217), suggesting uniform challenges requiring sector-wide solutions. Hence, null hypothesis was accepted and alternative hypothesis was rejected.

Environmental Problems

Environmental problems encompassed diminution in natural resources (mean 3.58, SD 1.015), infertile land (mean 3.61, SD 0.950), imbalance of land conservation (mean 3.52, SD 1.080) and ecological unsoundness (mean 3.64, SD 1.117), affecting raw material availability and production sustainability.

Table 9: Group Statistics of Environmental Problems

	N	Mean	SD	95% CI for Mean		Minimum	Maximum
				Lower Bound	Upper Bound		
Kot Jewer	50	3.5950	.48940	3.4559	3.7341	2.75	4.50
Neota	50	3.5450	.50682	3.4010	3.6890	2.50	4.50
Sanganer	50	3.6900	.58371	3.5241	3.8559	2.25	5.00
Amer	50	3.5100	.59109	3.3420	3.6780	2.50	5.00
Total	200	3.5850	.54476	3.5090	3.6610	2.25	5.00

H_o3e : There is no significant difference in the Environmental Problems of blue pottery artisans across the selected four areas of Jaipur district.

Journal of Information Systems Engineering and Management
2024, 9(4s)
e-ISSN: 2468-4376
https://www.jisem-journal.com/

Research Article

H_a3e : There is significant difference in the Environmental Problems of blue pottery artisans across the selected four areas of Jaipur district.

Table 10: ANOVA table of Environmental Problems

ANOVA					
	Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Between Groups	.918	3	.306	1.031	.380
Within Groups	58.138	196	.297		
Total	59.055	199			

ANOVA analysis confirmed no significant differences across areas for environmental problems (F=1.031, p=0.380), suggesting uniform challenges requiring sector-wide environmental strategies. Hence, null hypothesis was accepted and alternative hypothesis was rejected.

PROSPECTS FOR SUSTAINABLE DEVELOPMENT

Current Market Status

Artisans recognized significant prospects through multiple avenues. Current market status evaluation showed moderate confidence in demand trends, with mean scores: Kot Jewer (3.5629), Neota (3.4971), Sanganer (3.6371) and Amer (3.5029), reflecting a stable and favorable market environment. Most respondents expressed agreement regarding good product demand, wide availability, reasonable pricing and steady sales opportunities, though concerns remained around competition from machine-made products and the need for stronger online and export-oriented marketing.

Table 11: Group Statistics of Current Market Status

	N	**Mean**	**SD**	**95% CI for Mean**		**Minimum**	**Maximum**
				Lower Bound	**Upper Bound**		
Kot Jewer	50	3.5629	.39299	3.4512	3.6745	2.29	4.43
Neota	50	3.4971	.39912	3.3837	3.6106	2.43	4.29
Sanganer	50	3.6371	.38852	3.5267	3.7476	2.57	4.29
Amer	50	3.5029	.35611	3.4017	3.6041	2.57	4.14
Total	200	3.5500	.38582	3.4962	3.6038	2.29	4.43

H_o4a : There is no significant difference in the Current Market Status of blue pottery artisans across the selected four areas of Jaipur district.

H_a4a : There is significant difference in the Current Market Status of blue pottery artisans across the selected four areas of Jaipur district.

Table 12: ANOVA table of Current Market Status

ANOVA					
	Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Between Groups	.639	3	.213	1.440	.232
Within Groups	28.984	196	.148		
Total	29.622	199			

Journal of Information Systems Engineering and Management
2024, 9(4s)
e-ISSN: 2468-4376
https://www.jisem-journal.com/

Research Article

The ANOVA value shows F = 1.440 with a p-value = 0.232, which is greater than 0.05. This indicates that there is no statistically significant difference among the four areas regarding current market conditions. In other words, artisans across Kot Jewer, Neota, Sanganer and Amer share relatively similar views about market demand, pricing, availability, quality, competitive threats, online opportunities and export possibilities. Since the p-value exceeds 0.05, the null hypothesis (H04a) is accepted, meaning there is no significant difference in the perceived current market status across the four selected areas. Accordingly, the alternate hypothesis is rejected.

Financial Assistance

Adequate finance assistance received positive responses, with mean scores: Kot Jewer (3.5582), Neota (3.5491), Sanganer (3.5691) and Amer (3.5891). Artisans particularly valued access to low-interest loans (mean 3.66, SD 0.910), venture capital (mean 3.62, SD 0.970) and working capital support, considered vital for business sustainability and growth. However, insurance coverage (mean 3.41, SD 1.076) and emergency financial support scored relatively lower, highlighting safety net gaps during crises.

Table 13: Group Statistics of Adequate Finance Assistance

	N	Mean	SD	95% CI for Mean		Minimum	Maximum
				Lower Bound	Upper Bound		
Kot Jewer	50	3.5582	.30012	3.4729	3.6435	3.00	4.18
Neota	50	3.5491	.37683	3.4420	3.6562	2.82	4.27
Sanganer	50	3.5691	.32639	3.4763	3.6618	2.27	4.36
Amer	50	3.5891	.32918	3.4955	3.6826	2.91	4.55
Total	200	3.5664	.33208	3.5201	3.6127	2.27	4.55

H_o4b : There is no significant difference in the Adequate Finance Assistance of blue pottery artisans across the selected four areas of Jaipur district.

H_a4b : There is significant difference in the Adequate Finance Assistance of blue pottery artisans across the selected four areas of Jaipur district.

Table 14: ANOVA table of Adequate Finance Assistance

ANOVA					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.044	3	.015	.133	.941
Within Groups	21.901	196	.112		
Total	21.946	199			

The ANOVA shows a Between-Groups Sum of Squares of 0.044, Mean Square of 0.015, F-value of 0.133 and a p-value of 0.941. Since the p-value is well above the 0.05 threshold, the results indicate no statistically significant difference in the perceptions of financial assistance among Kot Jewer, Neota, Sanganer and Amer artisans. This means all four groups experience financial constraints and support mechanisms in a uniform manner. Based on these findings, the null hypothesis (H04b), which states that there is no significant difference in adequate finance assistance across the four selected areas is accepted and the alternate hypothesis is rejected.

Journal of Information Systems Engineering and Management
2024, 9(4s)
e-ISSN: 2468-4376
https://www.jisem-journal.com/

Research Article

Subsidies and Grants

Regarding subsidies and grants, artisans believed raw material subsidies (mean 3.58, SD 1.104), export promotion grants (mean 3.62, SD 1.035) and technology upgrade support were crucial for industry development. Training and skill development grants, research and development support and quality certification assistance were appreciated, though infrastructure development (mean 3.41, SD 1.042) and youth entrepreneurship grants reflected areas needing more targeted efforts. Group statistics showed closely aligned mean scores: Kot Jewer (3.5246), Neota (3.5200), Sanganer (3.5892) and Amer (3.4862), with overall mean 3.5300.

Table 15: Group Statistics of Subsidies and Grants

	N	Mean	SD	95% CI for Mean		Minimum	Maximum
				Lower Bound	Upper Bound		
Kot Jewer	50	3.5246	.28046	3.4449	3.6043	2.92	4.15
Neota	50	3.5200	.31181	3.4314	3.6086	2.92	4.23
Sanganer	50	3.5892	.21791	3.5273	3.6512	3.15	4.15
Amer	50	3.4862	.31176	3.3976	3.5748	2.85	4.15
Total	200	3.5300	.28343	3.4905	3.5695	2.85	4.23

H_o4c : There is no significant difference in the Subsidies and Grants of blue pottery artisans across the selected four areas of Jaipur district.

H_a4c : There is significant difference in the Subsidies and Grants of blue pottery artisans across the selected four areas of Jaipur district.

Table 16: ANOVA table of Subsidies and Grants

ANOVA					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.278	3	.093	1.156	.328
Within Groups	15.708	196	.080		
Total	15.986	199			

The ANOVA results to assess whether perceptions of subsidies and grants differ significantly across the four areas. The results show a Between-Groups Sum of Squares of 0.278, Mean Square = 0.093, F-value = 1.156, and a p-value = 0.328. Since the p-value is greater than 0.05, there is no statistically significant difference in the way artisans from Kot Jewer, Neota, Sanganer and Amer perceive subsidies and grants. The Within-Groups Sum of Squares is 15.708 with a Mean Square of 0.080, reinforcing that most variation in responses occurs within groups rather than between them. Based on these results, the null hypothesis (H04c) stating that subsidy and grant perceptions do not differ significantly across the selected four areas is accepted, while the alternate hypothesis is rejected.

Marketing Strategies

New marketing strategies showed significant belief in e-commerce platforms (mean 3.69, SD 0.926), social media marketing (mean 3.68, SD 0.972) and tourist-focused strategies (mean 3.69, SD 0.948) as vital tools to reach wider audiences and increase sales. Group statistics showed remarkably consistent mean scores: Kot Jewer (3.5500), Neota (3.5317), Sanganer (3.5367) and Amer (3.5450).

Journal of Information Systems Engineering and Management
2024, 9(4s)
e-ISSN: 2468-4376
https://www.jisem-journal.com/

Research Article

Table 17: Group Statistics of New Marketing Strategies

	N	Mean	SD	95% CI for Mean		Minimum	Maximum
				Lower Bound	Upper Bound		
Kot Jewer	50	3.5500	.28372	3.4694	3.6306	3.00	4.25
Neota	50	3.5317	.37755	3.4244	3.6390	2.58	4.25
Sanganer	50	3.5367	.27208	3.4593	3.6140	3.00	4.25
Amer	50	3.5450	.23341	3.4787	3.6113	3.08	4.08
Total	200	3.5408	.29430	3.4998	3.5819	2.58	4.25

H_o4d : There is no significant difference in the New Marketing Strategies of blue pottery artisans across the selected four areas of Jaipur district.

H_a4d : There is significant difference in the New Marketing Strategies of blue pottery artisans across the selected four areas of Jaipur district.

Table 18: ANOVA table of New Marketing Strategies

ANOVA					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.010	3	.003	.038	.990
Within Groups	17.226	196	.088		
Total	17.236	199			

The ANOVA results, which show no significant difference across the four areas regarding perceptions of new marketing strategies. The Between-Groups Sum of Squares is 0.010 with a Mean Square of 0.003, producing an F-value of 0.038 and a p-value of 0.990. Since the p-value is above 0.05, the findings confirm that artisans' views do not vary by region. Most of the variation occurs within groups, as seen in the Within-Groups Sum of Squares of 17.226 (Mean Square = 0.088). The Total Sum of Squares is 17.236 across 199 degrees of freedom. Therefore, the null hypothesis (H04d) that no significant difference exists across the four areas is accepted, while the alternate hypothesis is rejected. This indicates that artisans across all areas perceive new marketing strategies in a consistently similar manner.

Innovation and Modernization

Innovation and modernization prospects revealed artisan value for preserving traditional designs (mean 3.62, SD 1.045) while acknowledging design innovation and customization importance. Group statistics showed mean scores: Kot Jewer (3.6133), Neota (3.5200), Sanganer (3.5833) and Amer (3.4433), indicating that artisans in all locations share similar agreement levels. However, fusion approaches and modern technology use scored slightly lower (mean 3.48), suggesting preference for conservative modernization.

Table 19: Group Statistics of Innovation and Modernization

	N	Mean	SD	95% CI for Mean		Minimum	Maximum
				Lower Bound	Upper Bound		

Journal of Information Systems Engineering and Management
2024, 9(4s)
e-ISSN: 2468-4376
https://www.jisem-journal.com/

Research Article

Kot Jewer	50	3.6133	.43701	3.4891	3.7375	2.67	4.50
Neota	50	3.5200	.37892	3.4123	3.6277	2.50	4.33
Sanganer	50	3.5833	.38576	3.4737	3.6930	2.67	4.33
Amer	50	3.4433	.32228	3.3517	3.5349	2.67	4.00
Total	200	3.5400	.38583	3.4862	3.5938	2.50	4.50

H_o4e : There is no significant difference in the Innovation and Modernization of blue pottery artisans across the selected four areas of Jaipur district.

H_a4e : There is significant difference in the Innovation and Modernization of blue pottery artisans across the selected four areas of Jaipur district.

Table 20: ANOVA table of Subsidies and Grants

ANOVA					
	Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Between Groups	.850	3	.283	1.930	.126
Within Groups	28.774	196	.147		
Total	29.624	199			

The ANOVA results, which confirm no significant difference in perceptions of innovation and modernization across the four areas. The test shows a Between-Groups Sum of Squares of 0.850, Mean Square = 0.283, F = 1.930 and a p-value = 0.126. As the p-value is higher than 0.05, the differences between Kot Jewer, Neota, Sanganer and Amer are statistically insignificant. The Within-Groups Sum of Squares is 28.774 with a Mean Square of 0.147 indicating that most variation occurs within groups rather than between them. The Total Sum of Squares is 29.624 across 199 degrees of freedom. Based on these results, the null hypothesis (H04e) stating that no significant difference exists in modernization-related perceptions across the four areas is accepted and the alternate hypothesis is rejected.

Future Prospects

Future prospects analysis showed hopeful outlook with high agreement on economic viability of the craft (mean 3.57, SD 1.054), profitability of investment (mean 3.66, SD 1.005) and survival in the digital age (mean 3.66, SD 1.029). Artisans expressed belief that Jaipur Blue Pottery has excellent prospects for growth in domestic markets (mean 3.42, SD 1.090) and that international markets offer significant opportunities (mean 3.54, SD 1.017). With proper support, artisans believed the craft could compete globally (mean 3.57, SD 0.933) and successfully adapt to changing market demands (mean 3.52, SD 1.037).

Table 21: Group Statistics of Future Prospects

	N	**Mean**	**SD**	**95% CI for Mean**		**Minimum**	**Maximum**
				Lower Bound	**Upper Bound**		
Kot Jewer	50	3.5111	.30117	3.4255	3.5967	2.67	4.22
Neota	50	3.5089	.38627	3.3991	3.6187	2.67	4.33
Sanganer	50	3.5689	.31955	3.4781	3.6597	2.89	4.22

Journal of Information Systems Engineering and Management
2024, 9(4s)
e-ISSN: 2468-4376
https://www.jisem-journal.com/

Research Article

Amer	50	3.5844	.38933	3.4738	3.6951	2.78	4.33
Total	200	3.5433	.35027	3.4945	3.5922	2.67	4.33

H_o4f : There is no significant difference in the Future Prospects of blue pottery artisans across the selected four areas of Jaipur district.

H_a4f : There is significant difference in the Future Prospects of blue pottery artisans across the selected four areas of Jaipur district.

Table 22: ANOVA table of Future Prospects

ANOVA					
	Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Between Groups	.228	3	.076	.617	.605
Within Groups	24.186	196	.123		
Total	24.415	199			

ANOVA results to determine whether perceptions of future prospects differ significantly across the four areas. The Between-Groups Sum of Squares is 0.228 with a Mean Square of 0.076, resulting in an F-value of 0.617 and a p-value of 0.605. Since the p-value is much higher than the 0.05 significance threshold, the analysis confirms that no statistically significant difference exists between the mean scores of Kot Jewer, Neota, Sanganer and Amer. The Within-Groups Sum of Squares is 24.186 with a Mean Square of 0.123 indicating that most variability exists within groups rather than between them. The Total Sum of Squares is 24.415 across 199 degrees of freedom. Based on these results, the null hypothesis (H04f) stating that there is no significant difference in artisans' perceptions of future prospects across the four areas is accepted, while the alternate hypothesis is rejected.

CONCLUSION

This comprehensive study of Jaipur Blue Pottery reveals a traditional craft at a critical juncture, facing formidable sustainability challenges while simultaneously holding considerable revitalization potential. The research demonstrates that artisans across all four study locations - Kot Jewer, Neota, Sanganer and Amer -experience remarkably uniform problems, with ANOVA results consistently showing no significant differences between areas for financial, production, marketing, transportation and environmental challenges. This uniformity indicates that difficulties are sector-wide rather than location-specific, requiring comprehensive policy interventions rather than targeted regional approaches.

The dominant challenges identified include inadequate access to finance with high interest rates (mean 3.65) and limited government assistance (mean 3.69), constraining investment capacity in quality materials and modern equipment. Production problems encompass inferior raw material quality (mean 3.78), outdated tools and techniques (mean 3.75), inadequate infrastructure (mean 3.66), technical knowledge gaps (mean 3.51) and workspace constraints (mean 3.73) that collectively hinder productivity, quality and competitiveness. Marketing difficulties stem from underdeveloped distribution channels, heavy intermediary reliance limiting direct consumer engagement and insufficient promotional capabilities. Transportation challenges include high costs (mean 3.83) and unsuitable packing (mean 3.73), while environmental concerns encompass resource diminution (mean 3.58) and ecological imbalances (mean 3.64). These interconnected challenges create a cycle of economic vulnerability that threatens craft sustainability and forces many artisans to consider alternative occupations.

Despite these formidable obstacles, significant prospects exist for sustainable development. The global resurgence of interest in handcrafted, environmentally-friendly products aligns perfectly with blue pottery's authenticity and sustainability credentials, creating new market opportunities domestically and internationally. Artisans recognize

the importance of e-commerce platforms (mean 3.69), social media marketing (mean 3.68) and tourist-focused strategies (mean 3.69) for expanding market reach, indicating readiness to embrace digital transformation. Access to low-interest loans (mean 3.66), venture capital (mean 3.62) and working capital support could address financial constraints, while subsidies for raw materials (mean 3.58), technology upgrades and export promotion (mean 3.62) could reduce costs and enhance competitiveness.

However, two significant economic variations emerged: investment behavior (χ^2=28.710, p=0.018) and borrowed amounts (χ^2=21.401, p=0.045) differed significantly across areas, suggesting varying financial awareness, institutional access and saving patterns. These differences indicate that while production and operational challenges are uniform, financial literacy and access to banking services require targeted regional interventions alongside sector-wide support.

Strategic interventions should focus on comprehensive skill development programs ensuring intergenerational knowledge transfer while equipping artisans with contemporary business and marketing skills. Technological integration through advanced preparation techniques, improved kiln technologies and digital design tools can streamline production, reduce costs and enhance quality without compromising traditional aesthetics. Product diversification into contemporary functional ceramic wares, home accessories and architectural elements can tap into new market segments while maintaining cultural authenticity. Strengthened branding through geographic indication labeling and collaborative marketing initiatives can increase visibility and enable premium pricing.

The craft's unique position using quartz powder, glass and Multani mitti instead of clay represents significant technological innovation that should be leveraged in marketing narratives emphasizing distinctiveness and sustainability. Collaborative ecosystems involving government bodies, NGOs, design institutions and e-commerce platforms can provide integrated support addressing multiple challenges simultaneously. Policy support should prioritize accessible credit facilities, raw material supply stabilization, infrastructure development, technical training programs and marketing assistance tailored to artisan needs.

The preservation of Jaipur Blue Pottery transcends economic considerations, representing cultural heritage conservation and identity maintenance for Rajasthani communities. With strategic interventions balancing tradition preservation with innovation adoption, financial support with capacity building and domestic market strengthening with international expansion, this centuries-old craft can overcome current challenges and thrive as a vibrant, economically viable industry providing sustainable livelihoods while safeguarding invaluable cultural legacy for future generations.

BIBLIOGRAPHY

[1] Ahuja, R. (2017). Reviving the Craft: Strategies for Sustaining Jaipur Blue Pottery. *Indian Journal of Traditional Knowledge*, 16(4), 752-761.
[2] Bhardwaj, A. (2018). Evolution of Blue Pottery Industry in Rajasthan. *International Journal of Research and Analytical Reviews*, 5(3), 590-592.
[3] Chishti, R. K., Jain, R., & Singh, M. (2000). *Tradition and beyond: Handcrafted Indian textiles*. Roli Books.
[4] Connolly, M. (2018). Clay culture: Jaipur Blue Pottery. *Ceramics Monthly*. Retrieved from https://ceramicartsnetwork.org
[5] Gupta, S. (2019). Handcrafted Ceramics in a Global Market: Opportunities for Blue Pottery. *Journal of Cultural Economics*, 13(2), 125-137.
[6] Kapur, H., & Mittar, S. (2014). Design intervention & craft revival. *International Journal of scientific and research publications*, 4(10), 1-5.
[7] Kumar, S., & Sharma, M. (2020). Sustainability challenges in traditional Indian crafts: A case study of Jaipur Blue Pottery. *Sustainability*, 12(8), 3323.
[8] Liebl, M., & Roy, T. (2003). Handmade in India: Preliminary analysis of crafts producers and crafts production. *Economic and Political Weekly*, 38(51/52), 5366-5376.
[9] Mathur, A. K., & Shukla, D. (2014). Managing dwindling glaze of Jaipur blue pottery: a case of Rajasthan, India. *International Journal of Advanced Research in Management and Social Sciences*, 3(12), 35-43.
[10] Ranjan, A., & Ranjan, M. P. (2007). *Crafts of India: Handmade in India*. Mapin Publishing.

Journal of Information Systems Engineering and Management
2024, 9(4s)
e-ISSN: 2468-4376
https://www.jisem-journal.com/

Research Article

[11] Rice, P. M. (1999). On the origins of pottery. *Journal of archaeological method and theory*, 6, 1-54.
[12] Sharma, P., & Bhatnagar, A. (2018). Technological Advancements in Traditional Crafts: A Case Study of Jaipur Blue Pottery. *Journal of Innovation and Technology Management*, 22(3), 98-115.
[13] Singh, R. (2023). Crafting success: the commercialization journey of handmade treasures in Rajasthan. *Journal of Management Value & Ethics*, 13(04), 106-112.
[14] Skibo, J. M., & Skibo, J. M. (2013). *Understanding pottery function* (pp. 1-25). Springer New York.
[15] Upadhyay, M., & Jain, U. C. (2019). Managerial challenges of handicraft industry: an Indian perspective. *International Journal of Research-GRANTHAALAYAH*, 7(11), 122-126.