

**Report Name:** Data Storytelling – Analytical Report for Goa Tourism

**Assignment Number:** 01

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**Date of Submission:** 2 July 2025

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### **Executive Summary**

This paper presents an analytical narrative regarding tourist behavior and participation in the artisan market in Goa using a sanitized dataset of purchase behavior and demographics. It endeavors to present actionable recommendations to key stakeholders like the Department of Tourism and local artisan communities. The analysis involved key areas such as spending behavior, sources of awareness, and dependence between age, spending, and probability of return. Results show that social media and events awareness play the most crucial role in artisan market awareness. Spending and repeat visits do not significantly rely on age or prior purchase. Based on these findings, the paper recommends strategic hotel partnerships, social media promotions, and in-person events in communities in an attempt to maximize artisan participation and maintain tourism.

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### **Introduction**

It's one of the Indian government's flagship tourist destinations, known for its seafront glamour, traditional architecture, and cultural vitality. Unlike beach and nightlife tourism, there are in Goa an unusual population of indigenous craftsmen whose work dictates the region's history and identity. To their detriment, too often they are marginal figures in mainstream tourist itineraries.

Tourism, though financially important, tends to ignore the potential in value-added cultural experience through local artisanship. It is important that tourists interact meaningfully with

the crafts so that the act benefits the locals' economy in addition to creating greater authenticity in the Goa visit.

### **Emergence of Data Analytics Creates Effective Frame for Optimizing Tourism Strategies**

Where tourist behavior can be interpreted using structured data, there can be customization of experiences that will prove enjoyable as well as culturally enriching.

This research interprets a formatted and clean dataset that records expenditure behavior, demographic characteristics, and level of artisan awareness. It draws raw data into basic insights for policy, tourism planning, and interventions in artisan promotion. Results are prepared for the end-users like tourism authorities, NGOs, and cultural businesses interested in sustainable and inclusive tourism development.

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### **Methodology Overview**

It began with the cleaning of the data meticulously using Microsoft Excel. Careful steps included handling missing values, validating improper values, standardizing category names, and recalculating total price by using formulas. Particular attention was paid in columns like Age, Product, Quantity, and Payment\_Mode so as to make them reliable.

The data was then analyzed using univariate and bivariate analysis after cleaning. Further variables were added where initial information was missing—e.g., a dummy “Return Visit” column and awareness sources.

Bar graphs, pies, and scatter plots with trend lines and  $R^2$  were used in the identification of correlations and trends between and within variables such as age, spending, participation in artisan market, and awareness of sources. Additional interpretation of these results was used in studying tourism behavior and formulating implementable strategies.

All manipulation of data was structured so that resulting answers can be clearly understood by non-technical decision-makers yet can be ultimately grounded in analytic integrity.

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### **Main Findings and Results**

#### **1. Community Action Becomes a Principal Awareness Generator**

One of the strongest patterns that emerged was the role of events in the community in stimulating artisan markets. In scenarios in which dummy awareness sources were implemented, most common methods used in discovery were:

- Community Events
- Social Media
- Hotel Brochures

These were represented through a frequency-based bar chart. Community events were at the forefront, which shows tourists are most likely to encounter artisan markets through in-person, immersive cultural events rather than static displays or casual mention.

**Implication:** There must be touchpoints for experiential engagement in highly frequented tourist spots such as beaches, forts, or festivals.

## 2. Spending in Artisan Markets Slightly Less Than Mass Market Products

By placing products like “Handcrafted Mug” and “Goan Pickle” in the category of artisan and “Jute Bags” in the commercial category, the comparison in expenditure was created:

- Artisan Market Visitors (Yes): ₹754 (average)
- Non-Artisan Visitors (No): ₹807 (average)

Surprisingly, non-artisanal purchasing was slightly larger. This can be attributed to bulk or group buying of mass market goods, which tend to be cheaper and in larger numbers.

**Implication:** Smaller average spend across artisan goods doesn't necessarily equate to diminished interest—but can be attributed to prices of products and visitor behavior.

Offering greater diversification in products or product bundling can boost visitor spend per head.

## 3. There Exists No Strong Correlation between Age and Tourist Spending

A scatter chart between age and total expenditure gave an  $R^2$  value of 0.0003, which indicates there was no significant correlation between them. This means that tourists across

all age levels expended equally.

**Implication:** Promotion strategies for artisan products do not have to be age-focused but can be consistent with themes of interest (culture, sustainably made, handmade) which transcend age groups.

#### **4. Probability of Return Visit Doesn't Depend on Spending**

Dummy variables for the return likelihood were also created in the process of modeling visitor sentiment. The  $R^2$  value for the scatter diagram between return interest and total expenditure was also 0.0003.

Similarly, Age vs. Return Visit had extremely low  $R^2$  value of 0.0035.

**Implication:** There is no reason guests will necessarily return if they spend more. This dismisses assumptions that increased economic contribution will ensure loyalty. Positive experiences, and not spending, may be larger return drivers.

#### **5. Tourists Feel Comfortable Paying Through Digital but There Are Gaps**

Though not numerically definite in this current case study, the cleansed dataset exhibited consistent payment through digital means adoption. 8 records, however, exhibited missing payment mode information, which indicates gaps in tracking or payments that were never recorded.

**Implication:** Even as penetration rises, education programs in mobile payments can still help artisan groups avoid losing customers because they do not have access to the internet or e-payment.

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### **Recommendation**

With regards to the above findings, the stakeholder-specific recommendations are as follows:

#### **1. Hotel Partnerships in Promotion of Artisans**

**Stakeholder:** Tourism Department & Hotel Associations

They must offer brochures and display locally produced items (e.g., room amenities, welcome gifts) in rooms and lobbies. This would make passive areas into educational touchpoints.

## **2. Social Media-Based Digital Marketing Campaigns**

**Stakeholder:** NGOs, Cultural Promoters, Government

Highlight artisans through behind-scenes content and promote hashtags like #GoaLocalCrafts. Partner with influencers in order to gain greater exposure.

## **3. Community Artisan Days in Tourist Areas**

**Stakeholder:** Local Tourism Boards, Cultural NGOs

Regular street-side events in hotspots as Calangute or Fort Aguada offer artisan expertise, expedited purchase on the site, and social media buzz.

Each recommendation aims to increase visibility, economic potential, and tourist delight in directions substantiated by facts.

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## **Reflections on Analytical Storytelling**

It was challenging and educational to transform the raw database into something interpretable by decision makers. One important challenge was managing missing or incomplete indicators such as probability of return or awareness source— required cautious assumption and dummy variable creation. It was tough to simplify complex relationships such as correlation into something useful that can be acted upon by someone in tourism administration.

Selecting which trends were most significant also involved paying attention to what was useful as opposed to what was intriguing. All significant learning was that data storytelling was about telling numbers but about facilitating decision-making. Charts and statistics did not matter unless they answered in real-world terms.

This process validated the need for sharp images, structured sections, and non-technical language in ensuring that information becomes highly influential.

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## **Appendix**

- Chart 1: Sources of Awareness – Bar Graph
- Chart 2: Non-Artisan vs. Artisan Spending – Bar Chart
- Chart 3: Age vs. Total Spending –  $R^2$  Scatter Plot
- Chart 4: Probability of Return Visit vs. Spending – Scatter Plot
- Cleaning Summary Table