



The Role of Marketing-Oriented Urban Planning and Design in Enhancing a City's Visual Image: A Case Study of Ghardaïa City

دور التخطيط والتصميم العمراني الموجه بالتسويق في تعزيز الصورة البصرية للمدينة دراسة حالة مدينة غرداية

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Abstract

This research examines the strategic role of marketing-oriented urban planning and design in enhancing the city's visual image, using Ghardaïa, a UNESCO World Heritage city in southern Algeria, as a case study. The study highlights the problem of the city's eroding visual image, which is a result of the poor integration between urban planning and city marketing.

The clarity of a city's visual image generally reflects the interaction between its urban formation elements—buildings, urban blocks, and internal and external spaces—and the background of the visual scene, such as topography and climate. However, the focus of this study is on the formative structure of the city's visual image, which is the combination of physical planning elements and the natural background. This can be conceptualized as the sum of two mathematical functions influenced by a primary variable, time (t). This is not necessarily a quantitative measurement of the visual image's clarity, but rather a qualitative assessment and interpretation of this image's significance, achieved by using strategic urban planning, innovative architectural design, and an effective marketing mix.

JEL Classification Codes : M31

Keywords

City Image; Urban Planning; Urban Design; Marketing Mix;

الكلمات المفتاحية

صورة المدينة؛
تخطيط
عمراني؛
تصميم
عمراني.
مزيج تسويقي.

الملخص

يتناول هذا البحث دراسة الدور الاستراتيجي الذي يلعبه التخطيط والتصميم العمراني الموجه بالتسويق في تعزيز الصورة البصرية للمدينة، مع أخذ مدينة غرداية التي تقع جنوب الجزائر، و المصنفة ضمن قائمة التراث العالمي لليونسكو، محورا للدراسة مع إبراز مشكلة تآكل الصورة البصرية للمدينة نتيجة قصور التكامل الذي يجمع بين التخطيط العمراني وتسويق المدينة.

كما أن وضوح الصورة المرئية لمدينة إجمالاً يعبر في مضمونه عن التفاعل الحاصل ما بين عناصر التشكيل العمراني التي هي في صورة مباني و كتل عمرانية إضافة الى فراغات داخلية و خارجية مع خلفية المشهد المرئي العمراني في صورة تضاريس و مناخ، إلا أن التركيز في هذه الدراسة سيكون على الهيكل التشكيلي للصورة البصرية للمدينة و هو الجمع بين العناصر المادية التخطيطية والخلفية الطبيعية، إذ يمكن تصورها كمجموع دالتين رياضيتين تتأثران بمتغير رئيسي هو الزمن (t) ليست بالضرورة قياس كمي لوضوح الصورة المرئية للمدينة بل هي قياس و قراءة نوعية لدلالات هاته الصورة، باستعمال التخطيط العمراني الاستراتيجي و التصميم المعماري المبتكر و المزيج التسويقي الفعال.

تصنيف JEL: M31

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1. Introduction

In the third millennium, cities have become urban entities competing to attract resources, investments, talents, and visitors. This competition is no longer limited to economic aspects or infrastructure alone but extends to the mental image and visual identity that are embedded in the minds of individuals and groups. The city's visual image, in its comprehensive sense, is the result of a complex interaction between physical components, urban functions, and cultural and social connotations that shape the collective consciousness of the place.

Urban planning and urban design are treated as cornerstones in shaping the physical form of cities and guiding their growth. Planning addresses strategic and holistic levels of land use, while design focuses on the morphological and aesthetic details of public and private spaces, directly influencing the user's sensory and cognitive experience. Planning contributes to defining the overall frameworks within which the city's features are delineated, while design is concerned with embodying these frameworks in a built environment with specific visual characteristics.

Amid escalating urban competitiveness, the concept of city marketing has emerged as an integrated strategy aimed at enhancing cities' attractiveness and promoting them as a "product" or "brand" to various target segments. City marketing is not limited to promotional campaigns alone but extends to improving the urban product itself, by enhancing quality of life, developing infrastructure, and formulating an attractive and distinctive urban environment.

The city's visual image is one of its most important intangible marketing assets. It is not merely an aggregation of architectural masses and landmarks but rather the product of a complex cognitive process influenced by multiple factors such as urban formation, spatial composition, landscapes, and aesthetic details. This image serves as a mirror reflecting the city's identity and values, contributing to building place loyalty and attracting investments and tourism.

The intersection between urban planning and design on the one hand, and urban marketing principles on the other, highlights the need to adopt a strategic marketing perspective in urban development processes. This perspective calls for thinking of the city as a brand to be built and promoted, with an emphasis on creating added value and a unique experience for users and visitors, which requires the concerted efforts of planners, designers, marketers, and decision-makers.

Ghardaïa, located in southern Algeria, is a unique model that embodies this challenge and opportunity. With its ancient history and distinctive M'zab architectural character, classified as a UNESCO World Heritage site, Ghardaïa offers a rich and complex visual environment. Its ancient ksour (fortified villages), mosques with conical minarets, and compactly arranged houses that skillfully adapt to the topography are not merely structural elements; they are visual icons bearing high historical, cultural, and heritage value.

However, Ghardaïa, like many historic cities, faces numerous challenges, particularly in preserving its visual authenticity amidst rapid urban expansion and socio-economic changes. This necessitates a deep understanding of how marketing-oriented urban planning and design efforts can contribute to enhancing these visual assets, protecting them from distortion, and presenting them to the world as a unique and attractive destination. From this premise, the current study aims to analyze the interactive relationship between urban planning and design dimensions and strategies for

marketing the city's visual image, while providing an applied framework based on Ghardaïa's specific context, with the goal of deriving mechanisms that contribute to building a strong and sustainable visual identity, enhancing its position as a distinctive cultural and tourist center.

1.1. Research Problem

Many modern and traditional cities alike suffer from the erosion of their visual identities and a decline in the quality of their urban landscapes, often due to the absence of a comprehensive strategic vision that combines urban development goals with urban marketing aspirations. While planning often focuses on functional efficiency and land use regulation, it may overlook the aesthetic and cognitive aspects that influence the city's mental image. Design, conversely, concentrates on aesthetic details without always linking them to broader marketing objectives. This disconnect leads to missed opportunities to maximize the cognitive value of the city's visual assets, weakening its competitiveness on the global stage. Questions remain incomplete regarding how to integrate these comprehensive approaches to enhance the visual image of historical cities with unique identities, thus forming a research gap that requires in-depth treatment.

Ghardaïa stands out as an exceptional model possessing immense visual and heritage potential, represented by its ancient ksour, its environmentally adapted architecture, and its unique social system. Despite its classification as a World Heritage site, it faces continuous challenges related to preserving these visual assets in the face of demographic changes, unplanned urban expansion, and the impacts of globalization. This poses a central challenge: How can Ghardaïa benefit from marketing-oriented urban planning and design to enhance its unique visual image, while preserving its authenticity and cultural heritage, and employing this in effective marketing strategies?, Thus, the core research question emerges:

What role does marketing-oriented urban planning and design play in enhancing the visual image of Ghardaïa City?

1.2. Research Questions

- What is the theoretical and conceptual framework for the city's visual image from a marketing perspective, and how can it be interpreted and applied to the urban and heritage context of Ghardaïa City?
- What are the prominent architectural and planning characteristics of Ghardaïa City—such as the ancient ksour, mosques, and urban formation patterns—that can be identified as essential visual assets with high marketing value?
- How can marketing-oriented urban planning contribute to the protection, preservation, and enhancement of Ghardaïa's architectural and heritage authenticity while promoting it as a unique tourist and cultural destination?
- What specific urban design mechanisms can be proposed and applied in Ghardaïa's environment to address visual distortions, improve the quality of urban landscapes, and maximize its cognitive and marketing appeal?
- What is the proposed framework for the urban marketing mix—including product, price, place, and promotion—that can support the building of a strong brand and a firmly established and sustainable mental image for Ghardaïa City?

1.3. Research Objectives

This study aims to achieve the following objectives:

- To construct an integrated conceptual framework for cities' visual image from a marketing perspective, specifically adapted to suit Ghardaïa's unique urban and heritage characteristics.
- To conduct an in-depth analysis of the inherent visual assets in Ghardaïa's architectural and planning characteristics, and to determine their potential marketing value.
- To propose marketing-oriented urban planning strategies that ensure the preservation and conservation of Ghardaïa's architectural authenticity, while simultaneously enhancing its status and appeal as a leading tourist and cultural destination.
- To develop innovative and applicable urban design solutions within Ghardaïa's environment, aimed at addressing any existing visual distortions, improving the quality of urban landscapes, and maximizing the city's cognitive and marketing impact.
- To establish a proposed model for the urban marketing mix (4Ps) that effectively contributes to shaping a strong and sustainable brand and mental image for Ghardaïa City, both locally and internationally.

1.4. Research Methodology and Tools

To achieve the study's objectives and answer its questions, this research adopts a **descriptive-analytical inductive approach**, taking Ghardaïa City as a case study. This involves focusing on collecting and analyzing non-numeric data to understand phenomena in depth and within their context. The tools include:

- Literature Review and Critical Analysis: An analysis of published scholarly literature in the fields of urban planning and design, city marketing, city visual image, and place branding. This aims to build a solid theoretical framework and identify research gaps.
- Documentary Analysis: Review and analysis of official documents related to Ghardaïa City, including: Urban and Master Plans: To understand past and present planning visions. Heritage Preservation Reports: To identify initiatives and efforts undertaken to protect architectural assets. Tourism Promotional Materials: To analyze the current image through which the city is promoted. Historical and Cultural Studies: To understand the context of urban and social development.
- Visual Content Analysis: Analysis of photographs, videos, and maps of Ghardaïa City, with a focus on: Architectural and Planning Elements: Ancient ksour, mosques, markets, streets, squares, and M'zab urban formation patterns. Aesthetic Characteristics: Colors, textures, materials, lighting, and the visual composition of scenes. Lynch's Cognitive Elements: Identification of paths, edges, districts, nodes, and landmarks that form the city's mental image. Visual Distortions: Monitoring and classifying areas of visual distortion and their impact on the overall image.

1.5. Previous Studies

Study 1: The Role of Urban Design in City Branding: A Case Study of Downtown Revitalization in European Cities

This study focused on: How can urban design processes, particularly in downtown revitalization and renewal projects, effectively contribute to building and enhancing the brand of European cities, and what challenges face this integration of urban design and marketing strategies? (Smith & Brown, 2022).

This study addresses the pivotal relationship between urban design and city branding strategies, with a particular focus on European downtown revitalization projects. The study sought to answer how urban design processes contribute to enhancing these brands, while exploring the challenges facing the integration of these two fields. The study adopted a qualitative approach through multiple case studies of European cities that experienced similar endeavors, using content analysis tools for official documents and promotional materials, visual analysis of images and urban designs, in addition to field observation to assess sensory impacts (Smith & Brown, 2022).

The results showed that high-quality urban design is a crucial element in building a positive city brand, and that well-designed public spaces effectively contribute to enhancing the visual image. The study also demonstrated that new or renovated architectural icons can transform into distinctive symbols for cities, and that community participation is essential to ensure residents' acceptance of the new brand. Moreover, it emphasized the importance of stories and spatial narratives embodied in design to connect people with the place, and stressed the necessity of close coordination between planning authorities, designers, and marketers to ensure consistency of vision and marketing message (Smith & Brown, 2022).

Study 2: Place Marketing and Visual Identity: A Study on Historic Cities in Asia

The study "Place Marketing and Visual Identity: A Study on Historic Cities in Asia" highlights how historic cities in Asia, rich in their complex visual identities, can benefit from place marketing strategies. The study investigates the challenges arising from balancing heritage preservation with modern promotion requirements. The study adopted a mixed-methods approach, combining qualitative and quantitative methods, through comparative case studies of three Asian historic cities. The study relied on analyzing questionnaires directed at city residents and visitors to assess their perceptions of visual identity, documentary analysis of heritage and marketing plans, in addition to visual content analysis of promotional materials and historical and modern images (Chen & Lee, 2021).

The results of this study revealed that architectural and heritage authenticity is the fundamental core of these cities' visual identity and should be the focus of any marketing strategy. It indicated that intelligent adaptation of modern infrastructure contributes to enhancing visual appeal without compromising identity. Among the findings also, successful cities in marketing their identity invest in the maintenance and restoration of historical landmarks, and cultural events contribute to highlighting visual dimensions. The study warned that visual distortion poses a significant threat to identity, emphasizing the need to develop strict design guidelines for historic areas to ensure visual homogeneity (Chen & Lee, 2021).

Study 3: Smart City Technologies and the Enhancement of Urban Visual Quality: A Perception Study

The study "Smart City Technologies and the Enhancement of Urban Visual Quality: Perception Study" explores the extent to which smart city technologies contribute to enhancing cities' visual quality and improving the visual perception of their residents and visitors, while analyzing the challenges hindering the integration of these technologies with traditional urban design concepts.

The study adopted a purely quantitative approach, consisting of a large-scale survey. The study used an electronic questionnaire directed at large samples of smart city residents and visitors to collect data on their perceptions of visual quality and the impact of smart technologies. Extensive statistical analysis of the collected data was then performed (Davis & Miller, 2023).

This study concluded that smart and aesthetic lighting significantly contributes to improving the visual quality of public spaces at night, and that interactive digital screens can add a dynamic dimension to the visual image if carefully designed. It also showed that respondents prefer the harmonious integration of technologies that enhance functions and aesthetics without overwhelming local identity (Davis & Miller, 2023). The results confirmed that visually-guided information systems are an effective tool for enhancing users' perception of the city, and warned that a lack of integrated planning for the incorporation of smart technologies may lead to visual distortions, indicating a positive relationship between good design of technological interfaces and user satisfaction with the visual environment.

Study 4: Urban Fabric and Sense of Place: Marketing the Intangible Heritage Through Visual Cues

The study "Urban Fabric and Sense of Place: Marketing the Intangible Heritage Through Visual Cues" focuses on how to market cities' intangible heritage, such as customs, traditions, and handicrafts, by utilizing visual cues embodied in the urban fabric, and determining the role of sense of place in supporting this marketing.

This study used a qualitative approach through an in-depth case study of a small city with a rich heritage in the Mediterranean region (Papadopoulos & Rossi, 2020). The study tools included analysis of local narratives, participatory observation, and in-depth interviews with artisans, elders, and artists, in addition to photographic documentation of visual details.

The results concluded that the traditional urban fabric serves as a repository of visual cues that refer to the city's intangible heritage, and that traditional markets and artisan workshops create immersive visual experiences that enhance the marketing of this heritage. Also, the study showed that events and festivals held in traditional public spaces highlight the links between the city's visual appearance and local customs. Among the findings, natural light and its interaction with architectural textures and materials is a powerful visual element that enhances the sense of place, and that the texture, color, and local materials in buildings provide rich visual cues about the place's history and culture. The study concluded that a strong sense of place, supported by visual elements, forms a basis for visitor and resident loyalty, and facilitates indirect marketing processes for the city (Papadopoulos & Rossi, 2020).

The four preceding studies offer valuable insights into the relationship between urban planning and design and a city's visual image from a marketing perspective. Nevertheless, there is a clear knowledge gap highlighted by our current study on Ghardaïa City, which can be leveraged to enhance the research contribution.

Despite the growing interest in cities' visual image and its role in enhancing their competitive appeal, there remains a notable knowledge gap in the literature concerning the integration of marketing-oriented urban planning and design, especially in the context of historic cities with unique architectural identities facing the challenges of contemporary development. Previous studies, such as Smith & Brown's (Smith & Brown, 2022) on European city centers, Chen & Lee's (Chen & Lee, 2021) on historic cities in Asia, Davis & Miller's (Davis & Miller, 2023) on smart city technologies, and Papadopoulos & Rossi's (Papadopoulos & Rossi, 2020) on urban fabric and sense of place, have provided valuable insights. However, these studies remain either focused on different geographical or architectural contexts, or they address specific aspects of the relationship without providing a comprehensive framework that connects the planning, design, and marketing dimensions for cities with a distinctive architectural character in the face of modernization.

The study of Ghardaïa City highlights the importance of this knowledge gap and attempts to contribute to bridging it. Ghardaïa is not just a historic city; it is a unique model with its authentic M'zab architecture, representing exceptional visual and heritage value. This study presents a rare research opportunity to deepen understanding of how to apply and develop theoretical concepts of marketing-oriented urban planning and design to this distinctive urban fabric. It does not limit itself to analyzing visual elements but seeks to establish an integrated framework for the urban marketing mix (4Ps) that is compatible with the specificity of these architectural assets, aiming to preserve authenticity while enhancing tourist and economic appeal. Through this focus, the current study will attempt to make an original contribution to academic literature by providing a new and applied perspective on how to manage the visual image of heritage cities, thereby strengthening their ability to build a strong and sustainable brand in a rapidly changing world.

2. Conceptual and Theoretical Background of the Study:

2.1. Visual City Image

The visual image of a city is much deeper than merely the sum of its material elements; it represents the overall and subjective impression formed in the minds of individuals and groups when they interact with the urban environment. This image is not limited to what the eye sees (Kotler, Keller, & Chernev, 2017) but extends to what the soul feels and the memory comprehends in terms of connotations and values. In this context, the city (Freire, 2018) becomes a "cognitive entity" carrying symbolic and cultural meanings that shape its identity. Kevin Lynch, in his seminal work "The Image of the City" (1960), laid the foundations for understanding this phenomenon (Lynch, 1960) by identifying five key elements that contribute to building a clear mental image of a place:

1. **Paths:** Paths are defined as channels of movement consistently used by individuals, such as streets, alleys, and walkways. In Ghardaïa City, these paths are not merely functional routes but an integral part of the city's visual and sensory experience. The narrow, winding

alleys within the ancient ksour, often shaded and enclosed by the walls of compactly arranged houses (Lynch, 1960), form a complex network that invites exploration and enhances the sense of belonging to the place. These paths lead to visual surprises and unique experiences, contributing to highlighting the distinctiveness of the M'zab urban fabric.

2. **Edges:** Edges represent dividing lines between two areas, which can be barriers or points of connection. In Ghardaïa, the concept of edges is clearly manifested in the M'zab Valley, on whose banks the ksour are situated, forming a unique natural barrier encompassing green palm oases within. Similarly, the outer walls of the ancient ksour, connected to the defensive, compactly arranged houses (Lynch, 1960), form built edges that define the boundaries of the settlements and give them a fortified and visually distinctive character.

3. **Districts:** Districts are defined as parts of a city with a distinctive character that observers can enter and exit. In Ghardaïa, the five ksour (Ksar Beni Isguen, Ksar Melika, Ksar El Atteuf, Ksar Bou Noura, and Ksar Ghardaïa) are in themselves distinct districts. Each ksar forms an integrated urban and social unit, with a unique urban fabric and a religious and social center (the mosque and square) (Lynch, 1960), giving the city an overall image of rich diversity within a cohesive architectural and historical unity.

4. **Nodes:** Nodes are strategic points in the city where paths converge or activities intersect, forming focal points. In Ghardaïa, the central market squares (Rahba) within each ksar, where alleys meet and daily and commercial life revolves, represent vital nodes (Lynch, 1960). Likewise, the main entrances to the ksour are pivotal points for transitioning from the valley's surroundings to the historic city center, enhancing their role as visual and functional nodes.

5. **Landmarks:** Landmarks are external reference points that help individuals with orientation and serve as symbols for the city. In Ghardaïa City, the conical-shaped minarets of the mosques, which adorn the skyline of each ksar, are prominent and unforgettable visual landmarks. The ksour themselves, as massive urban masses crowning the hills, constitute unique natural and man-made landmarks, etched in memory as iconic symbols of the city.

This complex visual image of the city is formed from a dynamic blend of **Form** and **Background**. Form represents all the material and built components that define the city's physical structure, such as buildings, streets, and facilities. Background, on the other hand, expresses the surrounding natural elements, such as topography, rivers, vegetation, and the sky, in addition to climatic conditions like lighting and temperature. The dynamic interaction between these two components creates a complete and unforgettable visual tableau that contributes to cementing the city's mental image in the collective memory of individuals and forms a focal point for any marketing strategy aimed at enhancing the place's attractiveness and identity.

2.2. Urban Morphology in Ghardaïa

Urban Morphology is concerned with studying the physical form of human settlements, including their general layout, street network, land divisions, and building structure, and how these elements change over time. In Ghardaïa City (Moudon, 1997), the urban morphology represents a

living testament to human ingenuity in adapting to a harsh environment, and it is in itself an unparalleled visual and heritage icon.

These concepts are manifested in Ghardaïa through:

- **Unique Architectural Masses:** These consist of the traditional M'zab houses, compactly arranged and organically terraced on the rocky hillsides. These houses do not follow a strict geometric plan but adapt to the topography, creating a dynamic visual gradation. Their facades are characterized by simplicity and harmony, with warm earthy colors inspired by local building materials (clay and stone), giving the city a homogeneous appearance that blends with the surrounding landscape (Karabag & Nadjla, 2019). This horizontal and vertical compactness is not only aesthetic but also provides natural protection from harsh weather conditions and enhances the city's traditional defenses.

- **Mosques with Distinctive Minarets:** Ghardaïa's mosques constitute prominent visual elements. Their minarets are characterized by their distinctive conical shape, often unadorned, reminiscent of oases or the surrounding hill shapes. These minarets, such as those in the Great Mosque of Ghardaïa Ksar or Sidi Brahim Mosque in Melika Ksar, are clear landmark points on the horizon, contributing to visually defining each ksar (Nourel, 2021).

- **The Five Ksour as Integrated Architectural Masterpieces:** The ksour themselves (including Ksar Bou Noura, Ksar El Atteuf, and Ksar Ghardaïa) are living examples of organic urban formation. Each ksar was built on a rocky hill, with buildings terraced around the central mosque and market square, forming a cohesive urban fabric. Their design details are characterized by:

- **Height and Terracing:** Buildings follow the natural contour lines of the hills, creating a gradient in height that gives the city a dynamic and flowing appearance.

- **Color and Materials:** Dominant light earthy brown and beige colors are derived from the clay and lime used in construction, lending the ksour a unified character that harmonizes with the surrounding desert.

- **Compactness and Harmony:** The closeness and interweaving of buildings create narrow alleys and shaded passages that provide a comfortable environment for pedestrians, highlighting the concept of unity and social solidarity within the M'zab community.

- **Climate Adaptation:** The design of buildings and narrow alleys contributes to mitigating desert heat and provides a cooler indoor environment.

These material elements do not merely present a static image; they narrate "dramatic stories" and deep "narratives" about the history of the M'zab people, their life philosophy, their adaptation to the environment, and their interconnected social system. Every alley, every wall, and every ksar carries within it tales of construction, resilience, and coexistence. These narratives imbue the visual image with cultural and moral dimensions, transforming silent buildings into living symbols of a rich heritage, thereby enhancing Ghardaïa's appeal as a unique cultural destination that transcends mere visual observation to reach a profound human experience.

2.3. Visual Background in Ghardaïa

A city's integrated visual image cannot be conceived in isolation from its **visual background**. This background comprises natural and environmental components that are no less important than the urban fabric in shaping visual perception and defining the unique character of the place (Freire, 2018). In Ghardaïa City, these natural components play a pivotal role in enhancing the aesthetic appeal of the urban landscape and providing captivating visual contrasts that reflect the genius of human-nature interaction.

- **The M'zab Valley:** The M'zab Valley, surrounded by the five historic ksour, is the beating heart of this natural backdrop. This valley is not merely a body of water but a vital ecological axis adorned with dense palm oases extending deep within it. This visual contrast between the emerald green of the oases and the warm earthy tones of the stone and clay ksour presents a mesmerizing panoramic scene (Karabag & Nadjla, 2019), demonstrating how humans managed to establish a flourishing civilization in the heart of the desert. This color combination gives Ghardaïa a distinct visual character that sets it apart from any other city.

- **Surrounding Rocky Terrain:** This adds another dimension to Ghardaïa's visual background. The rugged rocky hills, upon which the ksour were built with remarkable intelligence, form an imposing natural backdrop. These hills are not merely passive elements; they are an integral part of the city's visual composition, highlighting the architectural genius of the M'zab people in adapting to the harsh environment. The contrast between the natural rock colors with their varying shades and the uniform colors of the buildings gives the urban landscape unique depth and dimension, contributing to a sense of resilience and harmony with nature.

- **The Desert Climate:** With its unique visual details, it completes the picture. The clear blue sky for most of the year provides a dramatic contrast with the earthy colors of the buildings, enhancing the clarity of lines and architectural details. The intense light of the desert sun highlights textures and architectural materials, creating deep shadows that add dimension and drama to the scene, altering the appearance of the buildings throughout the day. Even the sometimes-present dusty atmospheres lend a mysterious and enchanting character to the city, transforming it into a scene akin to Orientalist paintings, where distant details fade into an aura of ambiguity.

This harmonious and unique interaction between human urbanism and the natural background gives Ghardaïa exceptional beauty that is not limited to its physical form but extends to its spirit and meaning. The close relationship between humans and their environment is evident in every visual detail, from the selection of natural materials to the way buildings and alleys are oriented, forming a strong basis for the city's marketing visual image (UNESCO, 2024) and offering visitors a unique sensory experience that solidifies Ghardaïa's place in their memory as an unforgettable desert jewel.

2.4. Equation for Visual Image

To illustrate the dynamics of a city's visual image, let's assume that the visual image is formed by the combination of physical planning elements and the natural background. It can be

conceptualized as the sum of two mathematical functions influenced by a primary variable, time (t), such that $t \geq 0$: the **Urban Form function** $UF(t)$ and the **Visual Background function** $VB(t)$ (Kotler, Keller, & Chernev, 2017). This function is not necessarily a precise quantitative measurement in the literal sense, but rather a conceptual model that helps understand the components that form the visual image and how they interact in a static or dynamic state depending on the change in time (t), thus the function becomes:

$$I_0 = UF + VB \text{ (Equation for Visual Image)}$$

$$I = UF(t) + VB(t) \dots \dots \dots (t) \geq 0 \text{ (Visual Image Function in terms of time t)}$$

- **Static Image:** When the city is viewed at a specific moment in time ($t=0$, like a still photograph).

$$\text{If } t=0, \text{ then } I_{\text{static}} = UF(t) + VB(t) = (FPS)(t+1)$$

- **Dynamic Image:**

$$\text{If } (t) > 0, \text{ then } I_{\text{dynamic}} = [UF(t) + VB(t)] \times (FPS) \dots \dots \dots 0 < FPS \leq 60$$

Where:

- I_0 : Equation for the city's visual image.
- Static, Dynamic: The city's visual image in static or dynamic state.
- **UF(t)**: Urban Form function, which includes architectural masses, landmarks, and urban assets.
- **VB(t)**: Visual Background function, which includes natural environmental elements such as topography, sky, climate, and water bodies (Kropf, 2017).
- FPS: Frames Per Second.

- **Visual Image Quality:** When the city is viewed in a dynamic context, as in promotional videos or field tours, the visual image is measured by the frames per second, where it does not exceed the limit: ($0 < FPS \leq 60$). When the number of frames or shots is greater than or equal to 24 frames per second ($FPS \geq 24$), this indicates the smoothness and realism of the visual experience. Conversely, if $FPS < 24$, it indicates distortion of the city's image. There is a direct relationship between the number of frames (FPS) calculated per second and the quality of the visual image. Therefore, the more frames, the greater the dynamism and realism of the perceived moving visual scene:

$$I_{\text{dynamic}} = [UF(t) + VB(t)] \times (FPS) \dots \dots \dots (t) > 0 \text{ et } 24 \leq FPS \leq 60$$

I_{dynamic} : is of high visual quality and cognitive yield if and only if $24 \leq FPS \leq 60$.

Where:

- **FPS**: Frames Per Second, an indicator of the dynamism of the visual experience (e.g., a minimum of 24 FPS for smooth video and a maximum of 60 FPS).

Applying the Equation to Ghardaïa: In Ghardaïa's context, this model can be used conceptually in the analytical study as follows:

To evaluate UF (Urban Form): This is not measured by direct numerical values, but rather qualitatively and descriptively through:

- **Architectural Visual Analysis:** Evaluating the harmony of masses, the quality of materials, the uniqueness of designs (e.g., mosque minarets), and the interconnectedness of ksar elements.

- **Lynch's Elements Analysis:** Determining the clarity of paths, landmarks, and districts in forming the mental image of the ksour.

To evaluate VB (Visual Background): This is evaluated qualitatively and descriptively through:

- **Aesthetic Analysis of Landscapes:** Assessing the harmony of oases, the valley, and topography with the urban environment, and the impact of natural colors and lighting.

- **Field Observation:** Documenting the interaction of natural elements with buildings.

- **Using FPS (Frames Per Second):** This variable specifically refers to the quality and efficiency of Ghardaïa's visual images during tours or when viewing visual promotional materials (tourism videos, documentaries) of the city, not a measurement of the city's reality itself, but its representation. High-quality videos of Ghardaïa showing movement within the alleys or panoramic views of the ksour will be more effective in solidifying the dynamic visual image.

Purpose of this Equation in the Study: This function does not aim to provide a precise quantitative measurement of the visual image but serves as a conceptual framework that helps to:

- Deconstruct the visual image into its basic components (urban form and background).

- It differs when touring or viewing the urban environment with the naked eye, where the urban planner and designer alone are responsible for adjusting the frames per second (FPS) by applying aesthetic urban design principles (unity, dominance, scale, proportion, rhythm...) and controlling the interactions between these components and how they contribute to visual perception through the city's urban design, making it attractive for viewing as many frames as possible per second.

- Guide the analysis process towards studying each function independently and then understanding the combined effect of their integration on Ghardaïa's visual and marketing appeal.

- Highlight the importance of quality in the city's visual representation through FPS in a marketing context.

3. Applied Study (Ghardaïa as a Model):

This section of the study provides an in-depth applied analysis of how marketing-oriented urban planning and design can enhance Ghardaïa's visual image. Based on qualitative study tools (literary, documentary, and visual analysis), we will explore the city's visual assets, analyze its strengths and weaknesses, and propose mechanisms for effectively marketing them.

3.1. Analysis of Ghardaïa's Visual Scene (Assets and Challenges)

A detailed analysis of Ghardaïa City's visual scene in **Table 01** below reveals exceptional visual richness enhanced by the unique harmony between authentic M'zab urbanism and the surrounding natural environment. The ancient ksour themselves, with their spiraling, compact design, narrow shaded winding streets, and innovative architectural systems, represent unparalleled visual icons. These characteristics not only bestow visual beauty upon Ghardaïa but also give it immense

marketing value as the "City of Oases and Ksour." They reinforce its status as a unique urban center protected by UNESCO, making it a globally attractive destination for those seeking authenticity and heritage. Other architectural icons, such as the conical minarets of mosques and traditional markets, further enrich this image, offering visitors a rich and integrated sensory and visual experience.

The analysis delves deeper to highlight the pivotal role of the natural environment in shaping Ghardaïa's visual image. The M'zab Valley, with its green oases, forms a captivating visual backdrop that aesthetically contrasts with the earthy colors of the ksour, embodying a color contrast that enhances the overall appeal of the scene. This natural interaction extends to the rocky terrain upon which the ksour were built, showcasing the genius of architectural adaptation, in addition to the impact of the desert climate with its dramatic lights and shadows that highlight architectural details and lend a special charm to the city. All these natural elements not only contribute to the aesthetics but also tell stories about the harmonious relationship between humans and their environment, enhancing Ghardaïa's competitive advantage as a unique tourist destination.

Despite these strong visual assets, the table clearly indicates key challenges that threaten Ghardaïa's overall image and require urgent intervention. Haphazard construction and uncoordinated urban expansion on the outskirts, along with a lack of coordination in commercial signage and advertisements and poor design of some modern public spaces, are among the most prominent visual distortions. These factors weaken visual harmony and threaten the city's authentic architectural identity, negatively impacting its attractiveness. To address this, the table offers proposed solutions focusing on setting strict urban design standards, activating protection and development plans for historic areas, and effective visual management of signs and advertisements. This analysis highlights the necessity of marketing-oriented urban planning and design not only as a promotional tool but as a vital strategy for preserving Ghardaïa's visual essence and ensuring its sustainability.

Table 01: Analysis of Ghardaïa's Visual Scene

Cate gory / Visual Element	Visual Marketing Value / Importance	Visual Challenges	Proposed Solutions (Planning and Design)
Ancient Ksour	Built on conical rocky hills, with spiraling compact buildings and narrow winding streets providing shade and protection. Feature innovative natural ventilation and lighting systems and interconnected houses forming defensive walls with warm earthy colors harmonizing with the environment. Represents the "City of Oases and Ksour" or the "Desert Jewel," UNESCO-	Uncoordinated urban expansion on the outskirts threatens the city's visual harmony.	Strict urban design standards must be set for new and surrounding areas, and protection and development plans for historic areas must be implemented.

	listed, offering captivating panoramic views suitable for global marketing.		
Other Architectural Icons	Strong symbols of the city's cultural and religious identity, enriching the visual landscape and enhancing the cultural experience for tourists, forming attractions for tourist and interactive activities.	Lack of coordination in commercial signage and advertisements in markets, in addition to poor design of modern commercial facades.	Strict regulations for the design and installation of signage and advertisements are proposed, along with rehabilitation of shop facades to match the city's traditional character.
Oases and Water System (Foggara)	Offer unique visual aesthetics due to captivating color contrast, enhancing the concept of environmental and human harmony. Possess heritage and environmental value marketable as a success story in adapting to the desert.	Environmental degradation or water scarcity may affect the vitality of the oases, in addition to insufficient highlighting of the Foggara as a visual and heritage element.	Programs for the preservation and development of oases must be implemented, and tourist routes highlighting the Foggara system developed, with consideration for aesthetic night lighting of the oases.
Terrain and Climate	Surrounding rocky terrain includes rugged hills upon which the ksour are built, with a contrast in rock colors against building colors. The desert climate, with clear blue skies and strong sunlight, highlights details and shadows, and dusty atmospheres may lend a charming character.	These elements highlight the genius of architectural adaptation to the environment, giving the urban landscape unique depth and dimension, and providing dramatic shadows and rich natural colors that enhance the aesthetic appeal of images. Natural landscapes may be affected by climate change; also, there is insufficient artistic utilization of shadows	Urban design for public spaces should utilize shadows and natural lighting, and artistic night lighting for prominent landmarks should be developed.

		and night lighting.	
General Challenges and Solutions	Haphazard construction and rapid urban expansion on the outskirts are widespread, with visual distortions in modern buildings resulting from inappropriate materials, colors, and heights. A lack of coordination in commercial signage and advertisements and poor design of some new public spaces are also observed. These challenges threaten visual harmony and weaken architectural identity, reduce city attractiveness, distract from authentic aesthetics, and cause visual chaos that negatively affects visitor and resident experience.	The challenges themselves (mentioned in the detailed description of this cell).	Strict building regulations requiring visual harmony must be put in place, architectural review committees activated, urban design for public spaces that enhances identity implemented, and visual management for signs and advertisements established.

Source: Prepared by the researcher based on collected data and information.

3.2. Visual Distortions in Ghardaïa:

Table 02 provides an in-depth analysis of the visual challenges facing Ghardaïa City, which are fundamental weaknesses that could hinder efforts to market its unique visual image. Rapid urban expansion, especially on the city's outskirts and in new areas, emerges as one of the most significant sources of distortion. Haphazard construction that disregards the local architectural character, whether in the use of materials, colors, or heights, leads to a loss of visual harmony between the city's authentic historical fabric and modern buildings. This weakens its distinctive visual identity, which forms the basis of its appeal. This disharmonious contrast threatens the unified visual message that Ghardaïa should present to the world. The table also points to the problem of visual distortions resulting from modern urban expansion itself, where some modern buildings do not consider aesthetic or heritage aspects in their design. Added to this is the poor design of new public spaces that lack the M'zab "spirit of place," which reduces the attractiveness of these areas and makes them alien to the city's general context. These challenges diminish the overall aesthetic and cognitive value of the city and can negatively affect visitors' experiences and hinder its ability to establish a positive and integrated mental image.

To address these challenges, the table provides proposed solutions focused on the role of effective urban planning and design. Setting strict urban design standards for new and surrounding areas and implementing comprehensive protection and development plans for historic areas are essential to preserving authenticity and preventing further distortions. It also highlights the

importance of urban design for public spaces that enhances local identity and effective visual management of signs and advertisements to ensure their harmony with the visual environment. This indicates that success in marketing Ghardaïa's visual image depends not only on highlighting its historical assets but also requires a comprehensive strategy to control urban expansion and ensure that future growth enhances, rather than weakens, its unique beauty and identity.

Table 02: Visual Distortions in Ghardaïa

Type of Visual Distortion/Challenge	Description and Impact on the City's Visual Image	Proposed Solutions (Urban Planning and Design)
Haphazard Construction and Urban Expansion on the Outskirts	- Rapid and uncoordinated expansion in new areas. - Non-adherence to local architectural character (materials, colors, heights). - Impact: Loss of visual harmony between old and new, weakening the city's authentic architectural identity.	Implement strict urban design standards: Develop building regulations that mandate the use of materials, colors, heights, and architectural styles that emulate the local character in new areas and those surrounding the ksour.
Visual Distortions of Modern Urban Expansion	- Modern buildings that do not consider the use of materials, colors, or heights proportionate to the local character. - Poor design of new public spaces that lack the spirit of the place. - Impact: Reduced city attractiveness, creation of negative visual contrasts affecting the overall harmony of the scene.	Apply protection and development plans for historic areas: Protect the ksour from any disharmonious interventions, and develop plans for rehabilitation and renewal of buildings in a way that restores their authentic charm. Implement urban design for public spaces: Redesign main squares and streets in a style that enhances Ghardaïa's visual identity, integrating aesthetic elements inspired by heritage.
Lack of Coordination in Signage and Advertisements	Uncoordinated commercial signs and advertisements in terms of sizes, colors, and locations. Visual clutter distracting from the aesthetics of authentic urbanism. - Impact: Weakened cognitive clarity of the place, distortion of the overall scene	Implement visual management for signage and advertisements: Establish strict controls for the design and installation of signs and advertisements to ensure their

	in commercial areas and markets.	harmony with the city's visual environment, and limit their haphazard spread.
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Source: Prepared by the researcher based on collected data and information.

3.3. Application of the Urban Marketing Mix (4Ps) and Control in Ghardaïa

To enhance Ghardaïa's visual image and market it effectively, it is essential to apply the principles of the **urban marketing mix** (4Ps: Product, Price, Place, Promotion) in an innovative and integrated manner as follows:

3.3.1. Urban Product (Product) of Ghardaïa:

Table 03 represents the tangible and intangible elements that constitute the urban product of Ghardaïa City, and how they can be designed through urban planning, urban design, and architectural design strategies to become attractive tourist destinations.

Table 03: Tangible and Intangible Elements Forming Ghardaïa City's Urban Product

Urban Product Components	Description and Examples	How to Design Products/Destinations (Planning and Urban Design)
Planning and Urban Design	Develop strategic foresight plans in accordance with the city's vision and mission to achieve its desired goals. Marketing by objectives for the final urban product.	These are the primary pillars in how the final form of the urban product is designed, whether through improvement, development, or modification.
Tangible Assets	The five historic ksour, green oases, mosques with unique character, authentic traditional markets.	Create specific tourist routes within the ksour with aesthetic informational signage and storytelling narratives. Develop architectural tourism programs focusing on the design details of the ksour and mosques.
Intangible Assets	Traditional handicrafts (weaving, pottery, jewelry), authentic M'zab customs and traditions, rich local cuisine, M'zab hospitality.	Organize handicraft workshops enabling visitors to interact and create their own products. Provide accommodation experiences in restored traditional houses for immersion in the M'zab lifestyle. Develop specialized cultural tourism programs focusing on folklore and customs.
Overall Product Value	Ghardaïa as a unique and rich "urban product" forming a comprehensive experience for visitors and residents, blending historical authenticity, cultural	Ghardaïa can be classified as an "authenticity tourism" or "architectural cultural tourism" destination to differentiate it in the global market.

	depth, and natural beauty.	
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Source: Prepared by the researcher based on collected data and information.

The table shows that Ghardaïa's "urban product" is rich and diverse, fundamentally rooted in urban planning, urban design, and architectural design. It is not limited to tangible assets such as ksour and oases but extends to intangible assets like handicrafts and customs and traditions. This duality offers a unique tourism experience, where visitors can not only witness architectural beauty but also immerse themselves in the authentic fabric of M'zab life. The proposals for product design, such as specific tourist routes, handicraft workshops, and accommodation experiences, reinforce this direction, transforming cultural heritage into interactive experiences that enrich the visit and solidify the city's visual image in memory as an authentic and culturally rich destination.

3.3.2. Pricing (Price) in Ghardaïa's Context:

Table 04: Pricing Strategies Reflecting Ghardaïa's Unique Value and Maintaining its Competitiveness

Pricing Element	How to Apply in Ghardaïa	Marketing Objectives
Accommodation Prices	Set prices for hotels and traditional guesthouses commensurate with the quality of service and authenticity of the experience offered.	Attract diverse tourist segments while preserving the perceived value of the place.
Tour Prices	Offer varied and flexible tour packages that accommodate different visitor budgets (economy, mid-range, luxury packages).	Increase visitor numbers and competitiveness, while providing options that suit wider segments.
Local Product Prices	Encourage fair pricing for handicrafts and local foods to support artisans and the community.	Support the local economy, ensure the sustainability of traditional crafts, and enhance the city's authentic image.
Value-Based Pricing	Price unique experiences (e.g., stays in restored traditional houses, specialized handicraft workshops) at a premium.	Reflect the incomparable cultural and experiential value of these activities, attracting tourists seeking deep experiences.

Source: Prepared by the researcher based on collected data and information.

The table above indicates that Ghardaïa's pricing strategy must be flexible and value-oriented. While it offers diverse pricing options to attract different tourist segments (from economy to luxury), it emphasizes the importance of value-based pricing for unique experiences like stays in traditional houses or handicraft workshops. This approach not only contributes to achieving good

economic returns but also enhances Ghardaïa's perceived value as an authentic and heritage-rich tourist destination, supporting its visual image as a high-quality destination with unique experiences.

3.3.3. Place (Place) for Ghardaïa:

Table 05: How to Improve Access Channels to Ghardaïa and Movement Within It

Aspect of "Place"	How to Apply in Ghardaïa	Marketing and Visual Objectives
Access Channels	Improve airport and road infrastructure leading to Ghardaïa. Highlight ease of access in promotional materials.	Ensure easy and comfortable visitor access, and enhance a positive first impression.
Internal Tourism Infrastructure	Develop hotels, guesthouses, and essential tourism services (restaurants, cafes) in a manner consistent with the city's architectural character.	Enhance the accommodation experience and emphasize designs that promote the authentic visual image.
Improved Movement within the City	Provide improved pedestrian pathways within historic ksour while preserving their character. Install clear, visually appealing directional signage designed to complement local architecture. Develop smartphone applications offering interactive maps and audio tours based on visual points of interest.	Improve visitor experience and guide them efficiently, maintain smooth tourist flow without disrupting local character, and deepen visitor understanding of the visual landscape.

Source: Prepared by the researcher based on collected data and information.

This table highlights the importance of the "Place" element in enhancing Ghardaïa's visual image, not only through ease of access but, more importantly, through the implementation of urban planning and design approaches according to high-quality specifications, understanding essential human needs and desires, and achieving dimensions of urban quality of life within the city's urban fabric. It prioritizes infrastructure, expanding public spaces, squares, sidewalks, and roads while ensuring a sustainable, pollution-free environment.

3.3.4. Promotion for Ghardaïa

Table 06: Various promotion mechanisms that can be used to build and solidify Ghardaïa's visual image in the minds of the target audience.

Promotion Mechanism	How to Apply in Ghardaïa	Marketing Objectives
Architectural Design as a Promotional Tool	Emphasize that Ghardaïa's architectural authenticity is, in itself, a powerful promotional tool, highlighting its beauty in every detail.	Leverage the city's visual essence as a core value in all campaigns.

Advertising	- Use high-quality images and videos of the ksour and unique visual scenes (minarets, alleys, oases) in international and local campaigns. Design advertising messages that highlight the "authenticity experience" and "a step back in time." Leverage digital platforms (social media, tourism websites, blogs).	Build awareness of the city, attract attention, and highlight its uniqueness as a cultural and historical destination.
Personal Selling	Train tourist guides to narrate historical and cultural stories and information about the city in an engaging manner.	Transform the visual experience into an immersive one, and strengthen visitors' emotional connection to the place.
Sales Promotion	- Organize cultural and artistic festivals in traditional squares and markets. Offer special deals during specific seasons to attract visitors.	Revitalize public spaces, attract visitors, and create live experiences that enhance the city's dynamic visual image.
Public Relations	- Build strong partnerships with international tour operators, airlines, and hotels. Host journalists, bloggers, and travel influencers to produce visual and written content. Maximize use of UNESCO classification as a global endorsement. Participate in international tourism fairs to display images and models of the ksour.	Build a positive reputation, increase global media coverage, and establish Ghardaïa's position as a global heritage destination.

Source: Prepared by the researcher based on collected data and information.

The promotion table demonstrates that Ghardaïa's urban character is the core of its promotion strategy, and architectural design is one of its tools. High-quality images and videos of this unique architecture should be a primary tool in all forms of advertising, focusing on telling the "authenticity experience" rather than merely showcasing places. The table also highlights the importance of human interaction through **personal selling** (tourist guides) who can transform the visual experience into a living story. **Public relations**, especially leveraging UNESCO classification and international partnerships, are crucial for solidifying Ghardaïa's position as a global destination with invaluable visual and heritage value, thereby enhancing the city's overall mental image.

3.3.5. Control and Implementation in Ghardaïa

Table 07: Mechanisms for control and implementation to ensure the sustainability of Ghardaïa's visual image and protect it from distortions.

Area/Mechanism	How to Apply in Ghardaïa (Proposed Examples)	Objectives and Visual Sustainability
Application of Urban Design Tools for Building Control	Develop and apply a strict building code for new areas and those surrounding the ksour, specifying harmonious materials, colors, heights, and facade styles. Activate the role of architectural review committees to evaluate new building designs and ensure their compatibility with the overall character.	Ensure visual harmony between old and new, and protect the city's authentic architectural identity.
Role of Legislation and Regulations in Preserving Visual Identity	Activate and update laws and regulations related to urban heritage preservation to protect the ksour from alteration or distortion. Impose fines and penalties on violators of building regulations that harm the visual image. Launch incentive initiatives for residents to preserve and restore their traditional house facades.	Protect historic visual assets from deterioration and distortion, and strengthen community commitment to heritage preservation.
Proposed Examples of Restoration or Development Projects	Restoration project for Beni Isguen ksar: Use traditional materials and techniques with subtle infrastructure improvements. "Green and Visual Ghardaïa" initiative: Plant local trees, improve night lighting for landmarks, and awareness campaigns. Develop a tourist pathway in the M'zab Valley: A pedestrian path connecting the ksour with natural materials and panoramic viewpoints.	Restore the splendor of historical assets, enhance environmental aesthetics, and provide practical models for preserving and enhancing the visual image.

Source: Prepared by the researcher.

This table shows that **control and implementation** are cornerstones in ensuring the sustainability of Ghardaïa's visual image. Establishing strict building codes and activating architectural review committees are crucial tools for controlling urban expansion and ensuring that any new development enhances, rather than distorts, the city's authentic character. It also highlights the importance of local legislation in protecting heritage and imposing penalties on violators, while incentive initiatives contribute to community engagement. The application methods for restoration and development projects offer a practical model for integrating preservation with modernization in

ways that enhance the city's visual image, confirming that Ghardaïa's visual sustainability requires a coordinated effort between planning, legislation, and actual implementation.

3.4. Visual Content Analysis (Analysis of Selected Photographs)

Image No. 01:

- **Architectural and Planning Elements:** The image provides a wide panoramic perspective of Ghardaïa City, clearly showcasing the essence of M'zab urban planning and design. The scene highlights densely packed urban blocks on the hillsides, reflecting an organic building pattern that adapts to the natural topography. One can observe the architectural progression from the bottom of the valley towards the hilltop, where buildings interlock and adhere in a tightly knit urban fabric. The conical minarets of the mosques, prominent above the horizon in the middle ground, serve as key landmarks defining the city's identity. In the foreground and scattered parts of the scene, dense palm trees add a natural touch, indicating the presence of green oases that mitigate the harshness of the desert environment and enhance environmental contrast.

- **Aesthetic Characteristics:** The image is dominated by a serene color palette that highlights Ghardaïa's authentic beauty. Warm earthy tones, such as light brown, beige, and burnt orange hues, prevail on the buildings, creating a distinctive visual harmony with the surrounding desert rock colors. This color harmony gives the city a warm character, deeply connected to its natural environment. The flat surfaces of the buildings, with subtle shadows highlighted by bright daylight, convey a sense of depth and authenticity. The dark green of the palm trees breaks the monotony of the earthy tones, adding a pleasant contrast that enhances the scene's vibrancy and points to elements of life in the heart of the desert.

- **Lynch's Perceptual Elements:** The image helps to highlight several perceptual elements that form the city's mental image. The conical minarets prominently stand out as essential **Landmarks**; they not only define the skyline but also facilitate visual orientation and are ingrained in memory as iconic symbols of the city. The scene can suggest that the settlements on the hills are distinct **Districts**, where each urban block possesses its unique visual characteristics. While the skylines between the hills and the urban area, as well as the interweaving of built masses and palm areas, form **Edges** that define spaces and enhance the concept of visual boundaries, **Paths** and **Nodes** are not clearly visible in this wide perspective. However, it can be assumed that a complex network of them exists within the dense urban fabric, contributing to the experience of walking and exploration.



Image No. 01: General view of Ghardaïa City (dz54, 2025)

- **Visual Distortions:** Despite its authentic beauty, the image is not devoid of indicators that suggest the presence of visual distortions that may affect Ghardaïa's overall image. Some parts of the scene, especially in the foreground and lower areas and on the sides, show buildings that appear newer and not entirely homogeneous with the traditional architectural style of the ancient ksour. These buildings may exhibit differences in colors, building materials, or facade designs, indicating the beginnings of uncoordinated urban expansion that lacks harmony with the city's authentic character. This contrast threatens to erode Ghardaïa's cohesive visual identity if these challenges are not addressed with targeted planning and design interventions.

- **Marketing Value:** This image is a visual asset of very high marketing value for Ghardaïa. It clearly highlights the city's authenticity and ancient heritage, making it attractive to tourists seeking unique cultural experiences and unconventional destinations. The image also reflects a calm and harmonious beauty between urbanism and nature, evoking a sense of peace and connection to the place. Most importantly, it emphasizes M'zab architectural distinctiveness through its compact blocks and unique minarets, a global architectural heritage that can be effectively marketed. Utilizing this image, alongside its UNESCO classification, can enhance Ghardaïa's credibility and attractiveness as a distinctive cultural tourism destination, encouraging the exploration of its intricate architectural and planning details.

Image No. 02:

- **Architectural and Planning Elements:** This image offers a closer, more detailed perspective of a vital aspect of Ghardaïa's urban fabric: its traditional markets and commercial alleys. A narrow, winding alley, a distinctive feature of M'zab ksour, is clearly visible, contributing to shade and protection from the sun. The image highlights traditional shops on both sides of the alley, displaying their goods directly on facades or within open spaces in front of them. The presence of covered roofs or awnings shading the passageway is noted, reflecting traditional architectural solutions for adapting to the desert climate. The

diverse stalls and displays form an essential part of the alley's visual composition, giving it a vibrant and bustling character.

- **Aesthetic Characteristics:** The image is characterized by a rich and contrasting color palette that reflects the vibrancy of the place. The earthy pink or light orange colors of the building walls, which form the primary background of the scene, stand out. However, what draws attention is the strong color contrast with the displayed goods, which feature bright and vivid colors (blue, red, green, yellow) in fabrics, pottery, and spices, giving the scene a visually dynamic and lively feel. Natural light filtering from above through the awnings creates a beautiful play of light and shadow on the paved alley floor, adding depth and appeal to the scene. The intricate details of the displayed products indicate a variety of textures and materials, from soft fabrics to rough grain sacks, enriching the visual experience.



Image No. 02: Shops in the old city center market of Ghardaïa (tahwaspresse, 2021)

- **Lynch's Perceptual Elements:** This image provides a strong representation of **Paths**, as the alley itself is a main thoroughfare for movement and exploration. It is not just a route, but a visual and sensory experience that encourages discovery. This commercial alley can be considered part of a wider **District** (such as the central market within one of the ksour), serving as a hub for commercial and social activity. The collection points of goods and displays, as well as the entrances to some shops, act as small **Nodes** within this path, where people stop to interact and purchase. While "Landmarks" in the traditional sense (like mosque minarets) are not apparent, the accumulation of goods and variety of colors themselves form a sensory and visual "landmark" that defines the identity of this commercial alley.

- **Visual Distortions:** Despite its authentic character, the image shows some aspects that can be considered visual distortions or challenges:

- While the abundance of goods adds vitality to the place, the display method can sometimes appear disorganized or haphazard, reducing overall visual clarity.

- Some plastic bags or modern containers may appear that do not entirely fit the traditional character of the place, forming a slight visual intrusion.
- Some awnings used for sun protection may be of low visual quality or uncoordinated, affecting the aesthetic appeal of the passageway's ceiling.
- **Marketing Value:** This image has very high marketing value for Ghardaïa, as it presents a vibrant and interactive aspect of the city:
 - The image highlights the authentic experience of shopping in traditional markets, attracting tourists seeking cultural interaction and unique local products.
 - The image conveys the market atmosphere that combines colors, sounds, and smells (spices), offering a comprehensive sensory experience that entices visitors to explore and purchase.
 - The image shows the city as a vibrant entity bustling with human and commercial activity, giving an impression of dynamism and authenticity.
 - It highlights handicrafts and local cuisine, enhancing the local economy and providing the city with an additional marketing advantage.
 - Every alley and product tells a story, which tourist guides can leverage to provide narratives that enhance the value of the experience.

Image No. 03:

- **Architectural and Planning Elements:** This image offers a unique aerial perspective of Ghardaïa City, clearly highlighting its dense and compact urban fabric, a distinctive feature of the M'zab ksour. The scene shows an enormous number of interconnected houses with flat roofs, organically cascading with the hills' topography. Narrow pathways or alleys separating large urban blocks are visible, appearing as dark crevices within this dense fabric. In the upper left corner, at least one mosque minaret can be discerned, indicating the presence of a religious center within this settlement. The image demonstrates the extent to which urbanism adapts to the environment, as the houses appear to climb the hills naturally and fluidly.

- **Aesthetic Characteristics:** The image features a warm and dramatic color palette, dominated by shades of brown, orange, and gold for the buildings, reflecting the colors of clay and stone used in construction, and heavily influenced by the lighting. Touches of turquoise or light blue on some house roofs (often exposed roofs or inner courtyards) create a beautiful color contrast, breaking the monotony of the earthy tones and giving the scene a distinctive touch. Lighting is a key aesthetic element here; the image shows strong sunlight casting oblique rays, creating long, deep shadows that highlight the buildings' dimensions and the details of the urban fabric, adding drama and beauty to the overall scene, especially with the varying heights of the houses.



Image No. 03: Aerial view of Ghardaïa City (aljazeera, 2016)

- **Lynch's Perceptual Elements:** This aerial image provides a deep understanding of Lynch's elements in Ghardaïa:

- **Districts:** The image clearly shows a massive and cohesive urban block, which can be considered a ksar or a large part of a residential district, conveying a sense of unity and spatial distinction.

- **Landmarks:** The visible minaret stands out as a primary visual landmark that distinguishes this district and aids in orientation within the dense urban space.

- **Paths:** The dark lines traversing the dense urban fabric indicate a network of narrow alleys and passages that form the main movement paths within this ksar. These paths become clear from this aerial perspective, highlighting the city's complexity and planning.

- **Edges and Nodes:** Despite the difficulty in identifying clear edges from this internal perspective of the urban block, the topographical gradation of the buildings can form internal edges. As for nodes, these might be small squares or main intersection points of alleys, which are not clearly visible in this perspective but can be imagined.

- **Visual Distortions:** From this comprehensive aerial perspective, the image appears largely homogeneous, dominated by an authentic traditional character. However, the presence of some turquoise or light blue roofs (which may be modern paints or non-traditional materials) might indicate some contrasts that may not entirely fit with traditional earthy colors if not well coordinated. However, in this image, they add an aesthetic touch.

- **Marketing Value:** This image has very high marketing value for Ghardaïa for several reasons:

- **Unique and Iconic Perspective:** The image offers an unusual aerial view, highlighting the unique formation of Ghardaïa's ksour from above, making it iconic and highly attractive in promotional materials.

- **Architectural Adaptation Genius:** It highlights the M'zab people's ingenuity in building their cities adapted to challenging terrain, which can be marketed as a unique engineering and environmental story.
- **Density and Authenticity:** The dense urban fabric shows the city's authenticity and ancient heritage, giving an impression of a rich heritage waiting to be discovered.
- **Visual Drama:** The long shadows and oblique lighting add drama and artistic beauty to the scene, making the image visually appealing and sparking curiosity.
- **UNESCO Classification:** This image directly reinforces Ghardaïa's value as a World Heritage site, showcasing this urban formation that has received international recognition.

4. Study Results:

The study reached the following conclusions based on the in-depth analysis of Ghardaïa City and the theoretical and applied context:

- The study proved that the five M'zab ksour, with their unique design adapted to the terrain, earthy colors, and winding streets, form the solid core of Ghardaïa's visual identity and represent an architectural icon of global value.
- The surrounding natural environment, represented by the M'zab Valley with its green oases and rocky terrain, contributes to creating captivating color and visual contrasts that enhance the aesthetic appeal of the urban landscape and highlight the genius of human-nature adaptation.
- The conical minarets form prominent visual **landmarks**, and the ksour are distinct **districts**, while the alleys form rich experiential **paths**, and market squares are vibrant **nodes**, all contributing to building a clear and distinctive mental image of the city.
- Handicrafts, authentic M'zab customs and traditions, and local cuisine are intangible assets that add depth and spirit to the visual product, transforming static scenes into rich sensory and emotional experiences.
- Uncoordinated construction on the outskirts of the ksour and in new areas, which does not adhere to the local architectural character, poses the main threat to visual harmony and weakens the city's architectural identity.
- Uncoordinated commercial signs and advertisements, and poor design of some modern public spaces, are sources of visual distortion that distract attention and reduce the attractiveness of the urban landscape.
- Proposed solutions, such as establishing a strict building code and activating architectural review committees, are crucial for ensuring visual harmony and protecting authenticity in future development processes.
- Strict controls on the design and installation of signs and advertisements are necessary to maintain the clarity of the visual scene and prevent clutter.

- Applying the principles of the **4Ps** (Product, Price, Place, Promotion) in an integrated manner enables Ghardaïa to transform its visual assets into an attractive and valuable tourist product, enhancing its position in the global market.
- To ensure the sustainability of the visual image, laws and regulations related to heritage protection must be activated, fines imposed on violators, and the local community encouraged to preserve traditional facades.

5. Discussion of Results:

The results of this study provide confirmation and expansion of the proposed concepts in the theoretical framework, especially concerning the visual image equation $I_0=UF+VB$ and how it affects the quality or distortion of the city's image in a dynamic context:

$$I_{dynamic}=[UF(t)+VB(t)]\times(FPS) \text{ for } t>0 \text{ and } 0<FPS\leq 60$$

The results strongly highlight that Ghardaïa's Urban Form (UF), represented by the five interconnected ksour, densely packed houses, and unique mosque minarets, is indeed the strongest independent variable in shaping the visual image. This directly aligns with our analysis of the study's "urban product," where these tangible assets form the core of the visual identity. The harmonious earthy colors consistent with local building materials and the dense urban fabric that fosters solidarity all contribute to creating a strong and rich static image (Istatic). The identification of Lynch's perceptual elements (paths, edges, districts, nodes, landmarks) demonstrates that this urban form is not merely a collection of buildings but an intelligently designed environment that facilitates perception and orientation and is ingrained in memory.

As for the Visual Background (VB), represented by the M'zab Valley with its green oases, the surrounding rocky terrain, and the influence of the desert climate, the results confirmed its crucial role as a second independent variable in enhancing Ghardaïa's visual image. The color contrast between the green and earthy tones, the dramatic sunlight, and deep shadows all add aesthetic dimensions to the Istatic and enhance Ghardaïa's uniqueness. This confirmation reinforces the concept of "visual background" within our theoretical framework, indicating that Ghardaïa is not just architecture but an integrated experience of architecture in an adapted natural environment.

In the dynamic image (Idynamic), the results related to "visual distortions" point to the challenges that may hinder the smooth and attractive perception of the city in motion. Haphazard construction and the lack of coordination in signage and advertisements can reduce the city's visual "frames per second," meaning they create clutter that distracts attention and impedes the immersive visual experience that Ghardaïa should offer. Herein lies the role of the proposed urban marketing mix (4Ps) as a mechanism to improve the city's FPS. Improving the urban "Product" (by designing tourist routes and workshops), establishing value-based "Pricing," enhancing "Place" by improving accessibility and movement (through improved signage and applications), and effective "Promotion" using high-quality images and videos and urban design tools, all aim to improve the city's "visual frame rate" in the minds of the audience, making its experience smoother, more realistic, and more appealing.

Based on previous studies, our study's results align with Smith & Brown's (2022) findings on the role of urban design in city branding, where Ghardaïa's architectural assets are marketable icons.

They also correspond with Chen & Lee's (2021) study that heritage authenticity is key, and the necessity of maintaining and restoring landmarks, and that visual distortion poses a significant threat. Our results complement Papadopoulos & Rossi's (2020) study on marketing intangible heritage through visual indicators embodied in the urban fabric of traditional markets and handicrafts. The gap our study sought to bridge lies in applying this comprehensive framework (UF, VB, FPS) to Ghardaïa's unique context and directly linking urban planning and design to practical marketing strategies, focusing on its specific challenges, thus providing an integrated model for managing the visual image of heritage cities in the face of modernization.

6. Conclusion:

This study, through its in-depth analysis of Ghardaïa City, demonstrates that the visual image of cities is no longer merely an automatic reflection of their physical components but the result of a strategic interaction between urban planning, urban design, and place marketing principles. Ghardaïa, with its unique M'zab architectural treasures and charming harmony with its desert environment, has revealed immense visual assets that form a fundamental pillar of its identity. These assets, ranging from the majestic ksour and winding alleys to the green oases and iconic mosque minarets, not only offer visual beauty but tell deep stories of exceptional human culture, history, and adaptation, making it an urban product with true global marketing value.

However, the path to preserving and enhancing this visual image is not without challenges. Rapid urban expansion, often uncoordinated and lacking adherence to local architectural character, threatens to erode the city's authentic visual harmony. Distortions resulting from a lack of coordination in commercial signage and advertisements, and poor design of some modern spaces, distract attention and reduce the appeal of the overall urban landscape. These challenges emphasize the necessity of moving beyond mere heritage preservation to adopting a proactive approach that combines the rigor of urban planning with the flexibility of urban design, guided by clear marketing objectives.

To ensure the sustainability of Ghardaïa's visual image and maximize its marketing value, the study recommends adopting an integrated framework based on blending marketing-oriented urban planning and design. This requires establishing strict design standards applied at all levels, from material and color selection to the heights of new buildings, along with activating control mechanisms and local legislation to protect heritage assets. Most importantly, a comprehensive urban marketing mix strategy (Product, Price, Place, Promotion) must be developed, focusing on highlighting the "authenticity experience" in Ghardaïa, and leveraging digital tools and public relations to promote it as a global cultural and heritage destination, capitalizing on its UNESCO World Heritage status.

Finally, the study of Ghardaïa presents an applied model that highlights the symbiotic relationship between urbanism and marketing, emphasizing that the future of heritage cities depends not only on their ability to withstand the challenges of expansion and modernization but on their ability to forge a strong and sustainable visual "brand." Ghardaïa, with its architectural distinctiveness and living heritage, possesses the potential to be not just a historical site to visit, but a visual story to tell, a cultural experience to live, and a destination to inspire future generations, all

through planning and design that are aware of the power of the visual image as a fundamental marketing tool.

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