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Unveiling the Secrets of the Inca Kingdom: Insights from Archaeological Findings in Peruvian History

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Abstract: This comprehensive research delves into the analysis of the Inca Kingdom in Peru through the lens of archaeological findings, exploring its historical, cultural, and societal dimensions. The study encompasses a multidisciplinary approach, combining archaeological, historical, and anthropological methodologies to unravel the mysteries of this ancient civilization. The investigation begins by examining the rise, peak, and decline of the Inca civilization, detailing key historical events and developments. Archaeological discoveries at significant sites such as Machu Picchu, Sacsayhuaman, and Ollantaytambo shed light on the architectural achievements and urban planning sophistication of the Inca. These findings reveal their advanced engineering skills and urban organization, showcasing the societal, political, and religious complexities of the empire. The analysis further scrutinizes specific artifacts, structures, and their functions, offering insights into daily life, cultural practices, and technological advancements within the Inca society. The political organization, social classes, economic activities, religious beliefs, and cultural elements are meticulously examined to paint a vivid picture of the Inca civilization's multifaceted nature. The methodologies employed in archaeological research, from excavation techniques to scientific analyses like carbon dating, geospatial analysis, and ethnographic studies, contribute to the comprehensive understanding of the Inca Kingdom's complexities and historical significance. The essay critically explores the implications of these archaeological findings, analyzing their lasting impact on the cultural and historical identity of Peru and the world.

Keywords: Inca Civilization; Archaeological Findings; Peruvian History; Cultural Legacy; Machu Picchu

1. Introduction

The Inca Empire, also known as Tawantinsuyu, was the largest pre-Columbian civilization in the Americas, flourishing in the Andean region of South America, particularly in what is present-day Peru, from the early 13th century until the arrival of the Spanish conquistadors in the 16th century. This sophisticated and powerful civilization, renowned for its architectural prowess, administrative structure, and cultural achievements, remains a subject of fascination and scholarly inquiry.

The Inca civilization, characterized by its engineering marvels such as Machu Picchu and the extensive road network, held a complex social, political, and economic system that allowed for the unification and governance of diverse ethnic groups within their vast territories. Their unique architecture, advanced agricultural techniques, and mastery of stonemasonry are enduring testaments to their engineering capabilities and cultural richness.

The Inca civilization began its rise from the highlands of the Peruvian Andes (Orlove, 1985). Originating from the city of Cusco, located in present-day Peru, the Inca people gradually expanded their influence through military conquest and strategic alliances. Under the leadership of their first emperor, Manco Capac, the Inca laid the foundations of what would become a powerful and highly organized state. Their unique governance

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Received: Aug 05, 2024

Revised: Aug 27, 2024

Accepted: Sep 15, 2024

Published: Sep 30, 2024



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system, based on kinship ties and administrative efficiency, allowed for the assimilation of diverse ethnic groups into a unified empire.

The Inca Empire flourished through a series of conquests and expansions under notable rulers like Pachacuti and Huayna Capac (Alconini, 2022). Pachacuti, in particular, is credited with the transformation of the Inca Empire into a formidable state through military campaigns, architectural projects, and administrative reforms. His reign marked the apex of Inca expansion and cultural achievement.

At its peak, the Inca Empire boasted an intricate network of roads, extensive agricultural terraces, and awe-inspiring architectural marvels (Stannard, 1993). The construction of grand cities such as Machu Picchu, renowned for its engineering prowess and spiritual significance, remains a testament to the Inca's architectural brilliance. These developments were complemented by a highly organized social structure, advanced agricultural practices, and a centralized economy supported by an intricate system of trade and taxation.

The Inca civilization reached its zenith during the mid-15th century, where it governed an expansive territory, fostering a unique amalgamation of diverse cultures, languages, and traditions under a unified imperial rule. Their capital city, Cusco, was a center of power and a hub for religious and administrative activities, reflecting the grandeur and sophistication of Inca society.

Archaeological exploration and excavation of Inca sites have been instrumental in unraveling the mysteries of this ancient civilization (Covey, 2018). Significant discoveries of artifacts, monumental structures, and the remnants of cities and ceremonial sites have contributed immensely to our understanding of the Inca way of life, their religious practices, economic systems, and societal organization.

Research efforts in the past have unearthed valuable insights into the Inca civilization, shedding light on their governance, agricultural methods, trade routes, and religious ceremonies (Shimada, 1994). However, gaps and unanswered questions persist, prompting the need for further exploration and analysis to deepen our comprehension of the Inca Kingdom and its impact on the broader historical narrative.

This current research endeavors to build upon the existing body of knowledge by conducting a detailed analysis of specific archaeological findings within the Inca Kingdom in Peru. By employing modern archaeological methodologies and analytical techniques, the aim is to glean deeper insights into the societal structure, cultural practices, and the daily lives of the Inca people.

The research aspires to address crucial questions concerning the Inca Kingdom's political organization, economic systems, and religious customs. By scrutinizing and interpreting the archaeological remains, this study seeks to contribute to a more nuanced and comprehensive understanding of the Inca civilization, thus enriching our knowledge of ancient Andean societies and their legacies.

2. Materials and Methods

2.1 Existing Literature and Related Studies

The study of the Inca civilization in Peru based on archaeological findings has been a subject of extensive academic research and archaeological investigation. A review of existing literature and related studies reveals a rich body of work that contributes to our understanding of the Inca Empire, its culture, and societal organization.

Archaeological Investigations: Numerous archaeological studies have focused on excavations and analyses of key sites within the Inca Empire (Reinhard & Ceruti, 2010). Works by prominent archaeologists such as Hiram Bingham's exploration of Machu Picchu and Johan Reinhard's investigations of high-altitude Inca sites have provided crucial insights into Inca architecture, ceremonial centers, and daily life.

Cultural and Social Studies: Scholars like John Rowe and Terence D'Altroy have delved into the cultural and social aspects of the Inca civilization (Ogburn, 2023). Their works explore the social hierarchy, political organization, and religious practices of the

Incas. Studies by Michael Moseley and Craig Morris shed light on Inca agricultural techniques and the economic systems that sustained the empire.

Ethnohistory and Ethnography: Ethnohistorical studies by scholars such as John Murra and Maria Rostworowski have used historical documents and native accounts to reconstruct the socio-political organization and societal structures of the Inca Empire (Beyers, 2001). Ethnographic studies have also contributed significantly to understanding the indigenous Andean perspective on Inca history and culture.

Technological Advances in Archaeology: Modern technological advancements in archaeology have provided new methods for studying Inca artifacts and sites (Masini et al., 2018). Studies utilizing radiocarbon dating, LiDAR (Light Detection and Ranging), and remote sensing techniques, as showcased in works by Sonia Alconini and others, have revolutionized our ability to understand Inca urban planning, resource management, and the extent of their territorial reach.

Comparative Analyses: Comparative studies comparing the Inca civilization with other ancient civilizations, such as the Maya or Aztec, conducted by scholars like Gary Urton and Brian Bauer, have highlighted similarities and differences, shedding light on broader patterns in pre-Columbian cultures.

Interdisciplinary Approaches: Recent studies have embraced interdisciplinary approaches, integrating fields like anthropology, history, archaeology, and environmental science to provide a more holistic understanding of the Inca Empire (Wright, 1996). This approach, as seen in the works of Lisa Trever and Charles Stanish, allows for a comprehensive analysis of the Inca civilization from multiple perspectives.

Ongoing Fieldwork and New Discoveries: Current ongoing fieldwork, expeditions, and research by institutions such as the Peruvian Ministry of Culture and various international archaeological teams continue to unveil new discoveries and reinterpret existing findings, constantly expanding our knowledge of the Inca civilization.

Administrative and Political Organization: Scholars have proposed theories about the sophisticated administrative structure of the Inca Empire (Pärssinen, 1992). The concept of Tawantinsuyu, the division of the empire into four quarters, is well-documented. The administrative center, Cusco, served as the heart of the empire, reflecting the hierarchical structure and the centrality of the emperor, who held both political and religious power. Studies have identified the Inca road system and the quipu (a recording device made of knotted strings) as integral components in the empire's communication and administrative apparatus.

Agriculture and Terracing: Findings reveal the remarkable agricultural practices of the Inca people, particularly their extensive use of terracing to cultivate crops in mountainous regions. Terraces and irrigation systems are seen as vital aspects of the Inca's ability to sustain a large population and provide surplus food.

Architecture and Engineering: The architectural prowess of the Inca is evident in their construction of monumental structures like Machu Picchu, Sacsayhuamán, and Ollantaytambo (Romney, 2021). The precise stone masonry and earthquake-resistant techniques employed in these structures continue to fascinate researchers.

Religious Practices: Studies highlight the importance of religion in Inca society (Cobo & Hamilton, 1990). Temples, shrines, and ceremonial sites were strategically placed and served a central role in religious rituals, reflecting the significance of the sun god, Inti, and other deities in their cosmology.

2.2 *Archaeological Findings*

2.2.1 Significant Archaeological Sites Within the Inca Kingdom

Significant archaeological sites within the Inca Kingdom have played a pivotal role in unraveling the mysteries of this ancient civilization (Joseph, 2010). These sites, characterized by their architectural grandeur and historical importance, have yielded crucial discoveries that contribute to our understanding of the Inca Empire.

Machu Picchu, often described as the "Lost City of the Incas," is undoubtedly one of the most iconic archaeological sites in the world (Bingham, 2010). This ancient citadel, nestled high in the Andes Mountains of Peru, was constructed during the 15th century under the reign of Inca emperor Pachacuti. Its location, surrounded by dramatic landscapes and steep mountain peaks, serves as a testament to the Inca's remarkable architectural ingenuity and their harmonious integration with the natural environment.

Machu Picchu has provided invaluable insights into Inca construction techniques, urban planning, and ceremonial practices (Masini et al., 2022). Archaeological excavations and research at this site have uncovered temples, agricultural terraces, and residential structures. Of particular interest is the Intihuatana stone, an enigmatic ritual stone associated with astronomy and spirituality.

Sacsayhuaman, located just above the city of Cusco, is another prominent archaeological site representing the Inca civilization's exceptional architectural abilities (Pasztory, 2021). It is famous for its colossal stone walls, meticulously constructed from massive limestone blocks. These stones, some weighing over 100 tons, fit together with such precision that even a blade of grass cannot pass between them. This precision remains a subject of admiration and mystery for researchers.

Sacsayhuaman served various functions, including military fortifications, ceremonial sites, and a location for the Inti Raymi festival, an important Inca celebration dedicated to the sun god. The site has been instrumental in understanding Inca military strategy and construction techniques.

Ollantaytambo, situated in the Sacred Valley of Peru, is a living example of Inca urban planning and construction (Gade & Gade, 2016). It is renowned for its massive, finely cut stone blocks that form a fortress, temple complex, and agricultural terraces. The site represents the Inca's adeptness at balancing functionality with aesthetic beauty.

Ollantaytambo played a strategic role in Inca military campaigns and was also an important religious and ceremonial center. Its terraces, featuring an intricate irrigation system, showcase the Inca's mastery of agricultural techniques in challenging terrain.

These archaeological sites have not only offered valuable insights into the architectural and engineering prowess of the Inca civilization but have also shed light on their religious practices, governance, and daily life. As ongoing research continues to unveil new discoveries and interpretations, these sites remain essential to our comprehension of the Inca Kingdom's historical and cultural significance.

2.2.2 The Artifacts and Structures of The Inca

Inca architecture is renowned for its precision and aesthetic grandeur. The use of massive stone blocks, expertly cut and fitted, is a hallmark of their construction. The functions of these architectural wonders varied. Fortresses like Sacsayhuaman were not only military strongholds but also ceremonial sites. The intricate layout of their cities, such as Cusco and Machu Picchu, served both administrative and religious purposes. The precision of their stone-cutting techniques, which allowed stones to interlock seamlessly, showcases their engineering prowess and mastery of construction, particularly in earthquake-prone areas.

Inca tools and technological innovations were critical for their construction projects, agriculture, and daily life. Stone and bronze tools, such as chisels and hammers, were instrumental in carving and shaping stone blocks. The use of bronze indicates their metalworking skills. The yoke and harness systems used to transport heavy stones over vast distances highlight their ingenuity in logistics and engineering.

Inca pottery was both functional and artistic. Their ceramics featured intricate designs, often depicting scenes from daily life or religious motifs. Ceramic vessels, known as "aryballos," served for storing and transporting liquids, such as chicha (corn beer), while others were used for ritual purposes. The styles and shapes of Inca pottery varied across regions, reflecting local preferences and practices.

Inca textiles were highly prized and emblematic of their culture. They were crafted using a range of materials, including cotton, alpaca, and llama wool. Inca textiles were characterized by vibrant colors and intricate patterns, showcasing their advanced dyeing techniques. Textiles served various functions, from clothing to religious offerings. Their quality and complexity revealed social status and played a crucial role in trade.

The *quipu*, a recording device made of knotted strings, is one of the most enigmatic artifacts of the Inca civilization. It is believed to have served as a system for record-keeping and communication. While the exact interpretation of *quipus* remains a subject of debate, they are a testament to the Inca's advanced method of information storage and communication.

Inca metallurgy is evident in the production of various metal objects, including gold and silver. They crafted jewelry, ornaments, and religious items, demonstrating their skill in metallurgy. The use of alloys allowed for the creation of intricate and intricate pieces that played essential roles in religious ceremonies and social hierarchy.

These artifacts and structures collectively provide valuable insights into the Inca civilization. They demonstrate the Inca's advanced technological knowledge, artistic prowess, and their intricate social and religious systems. The precision, functionality, and artistic beauty of their creations continue to captivate researchers, shedding light on the daily lives and cultural heritage of the Inca people. Studying these objects and their functions helps us appreciate the depth and complexity of this ancient civilization.

2.3 Socio-Political Organization

2.3.1 Political Structure

The political organization of the Inca Kingdom was structured with a sophisticated hierarchical system, led by an emperor considered to be the divine ruler, reflecting a well-organized administrative apparatus (Kolata, 2013). The Inca political structure, known as *Tawantinsuyu*, held a central role in the governance and control of the vast territories comprising the Inca Empire.

The Inca social hierarchy was highly stratified, with the emperor, known as the *Sapa Inca*, occupying the apex (Kolata, 2013). The *Sapa Inca* was believed to be of divine origin, revered as a godlike figure and the supreme authority. He held absolute power over the empire and was regarded as both the political and religious leader. The *Sapa Inca* was considered the intermediary between the people and the gods, symbolizing divine descent and legitimacy to rule.

Beneath the emperor, the nobility and aristocracy formed the upper echelons of society. They held significant administrative, military, and religious positions, serving as provincial governors and administrators of various regions within the empire. The highest-ranking nobles had access to important resources and held considerable influence in decision-making processes.

Further down the social hierarchy were the commoners, farmers, and laborers who worked the land and contributed to the empire's economy. Despite their lower status, these individuals played crucial roles in sustaining the empire's agricultural productivity and were subject to tribute and labor obligations.

The administrative structure of the Inca Empire was based on a system of governance designed to maintain control and facilitate communication and resource management across a vast territory. The empire was divided into four regions or *suyus*, each governed by a governor or governor-general, known as a *toqrikoq*.

At the regional level, officials oversaw the collection of taxes, allocation of resources, and enforcement of laws. They reported directly to Cusco, the capital city and administrative hub of the empire. Cusco served as the political, religious, and cultural center, housing the emperor's residence, the *Coricancha* (Sun Temple), and important administrative buildings.

An efficient network of roads, known as the Inca road system, enabled communication and facilitated the movement of goods, people, and messengers throughout the

empire. Chasquis, or relay runners, were crucial in maintaining a rapid communication system across vast distances.

While much is known about the general structure of the Inca political organization, there are gaps in understanding the exact mechanisms of governance, the role of women in leadership positions, and the specific functions of various administrative offices. Additionally, the level of centralization and control, the methods of succession, and the decision-making processes within the empire remain topics of scholarly debate and ongoing research.

2.3.2 Social Structure

The social structure of the Inca civilization was highly stratified, with a well-defined hierarchy that shaped the roles, responsibilities, and societal norms of its inhabitants (Zuidema, 1964). The society was organized into distinct classes, each with its own set of obligations, privileges, and societal norms.

At the pinnacle of Inca society were the nobility and elites, including the ruling class, high-ranking officials, and aristocrats. These individuals held significant power, occupying administrative, military, and religious positions. They were responsible for governing provinces, managing resources, overseeing construction projects, and conducting religious rituals. The nobility enjoyed privileges such as owning large estates, luxurious clothing, and participating in important ceremonies.

Below the nobility were the commoners, comprising the majority of the population. This class included farmers, laborers, and artisans. Farmers cultivated the land using advanced agricultural techniques, managing terraced fields and contributing to the empire's food supply. Artisans, skilled in various crafts like pottery, metalwork, and textile production, played essential roles in creating goods for trade, religious offerings, and everyday use.

The Inca employed a labor tax system known as "mit'a," obliging individuals to contribute labor for public works, construction, and agricultural projects. This labor system formed the backbone of the empire's infrastructure and economic development. Men, in particular, were conscripted for various labor duties, such as building roads, terraces, and monumental structures.

In Inca society, women held diverse roles and responsibilities. While men often participated in labor and military duties, women played critical roles in domestic activities, including weaving textiles, maintaining households, and agricultural work. Some women also held positions in religious ceremonies, particularly as priestesses, indicating their involvement in spiritual practices.

Inca society was characterized by a strong sense of communal responsibility and duty to the state. The principle of "ayni" or reciprocity governed social interactions, emphasizing the importance of mutual assistance and cooperation among community members. Additionally, the practice of "ayllu" represented a communal living arrangement, where families lived and worked together, contributing to collective efforts and sharing resources.

The Inca society was also deeply rooted in spiritual and religious beliefs. Worship of nature, the sun god Inti, and other deities played a significant role in their daily lives. Ceremonial rituals, festivals, and offerings were integral to maintaining harmony with the spiritual world.

While much is known about the general social structure of the Inca civilization, there are gaps in understanding the specifics of individual roles, the social mobility within classes, and the extent of influence that women had in various aspects of society. Additionally, interpretations of certain aspects of social life and norms are still subject to ongoing scholarly debate and research.

2.3.3 Economic System

The Inca Empire was built upon a sophisticated and intricate economic system that relied on various activities, including agriculture, trade, and the efficient utilization of

natural resources (Chepstow-Lusty et al., 2009). Their economic model was instrumental in sustaining the vast empire and supporting the diverse needs of its inhabitants.

Agriculture was the backbone of the Inca economy. They utilized advanced techniques to cultivate crops in diverse ecological zones. Terraced fields, irrigation systems, and agricultural terraces enabled them to grow a wide variety of crops, such as maize, potatoes, quinoa, and various tubers. The extensive terracing allowed for cultivation in mountainous regions, showcasing their mastery in adapting to challenging landscapes. In addition to staple crops, they also grew cotton, coca, and various medicinal plants.

Resource management was a key feature of the Inca economy. The empire's administrative system efficiently controlled the distribution of resources. The concept of "vertical archipelago" allowed for the cultivation of different crops at various altitudes, optimizing resource use and reducing dependence on a single source of food. Storage facilities known as "qullqas" stored surplus crops, ensuring reserves for times of scarcity.

Inca engineering prowess was notable in the creation of extensive road systems and bridges that facilitated trade and communication. These roads, known as "Qhapaq Ñan," connected distant regions and allowed for the movement of goods and people across the empire. The roads were complemented by relay runners, called chasquis, who ensured rapid communication.

Trade networks were integral to the Inca economy. The empire engaged in both internal and external trade, exchanging goods within the empire and with neighboring societies. The redistribution of goods through the use of the mit'a labor system also contributed to an exchange of products. Coastal areas provided resources like fish and marine products, while the highlands produced textiles, ceramics, and agricultural products.

The Inca employed a labor tax system known as "mit'a," where citizens were obligated to contribute labor for public works, agricultural tasks, and construction projects. The system was essential in supporting the empire's infrastructure and economic development. Additionally, conquered regions paid tribute in the form of goods, resources, or labor, which sustained the empire's economy and provided wealth for the elite.

While the general structure of Inca economic activities is well-documented, there are gaps in understanding the specifics of trade routes, the mechanics of redistribution, and the nature of economic interactions with neighboring societies. Interpretations of the exact extent of economic autonomy in local regions and the impact of environmental changes on economic practices remain areas of ongoing research and scholarly debate.

2.4 Religion, Beliefs, and Culture

2.4.1 Religious Practices

The religious beliefs and practices of the Inca civilization were integral to their cultural identity and societal organization. Their religious system, deeply rooted in nature and cosmology, influenced every aspect of Inca life.

The Inca religion was polytheistic, with a complex cosmology that revered various deities (Galvano, 1996). The Inca worshipped a multitude of gods, most notably Inti, the sun god, who was considered the most important deity. The Incas believed that their rulers were descendants of Inti, emphasizing the divine right to rule. Other significant deities included Viracocha, the creator god, and Mama Quilla, the moon goddess.

Religious rituals and ceremonies were central to Inca life and were performed at various ceremonial sites throughout the empire (Malpass, 2009). Offerings, prayers, and sacrifices were carried out to honor the deities and maintain harmony between the natural and supernatural worlds. Ceremonies were held on specific dates and tied to agricultural seasons, celestial events, and significant moments in the Inca calendar.

The Inca Empire was dotted with numerous ceremonial sites of religious significance. The most renowned of these sites include:

Coricancha (Temple of the Sun): Located in Cusco, Coricancha was the most important religious site in the empire (Bauer & Stanish, 2001). It was dedicated to Inti, the sun god, and served as the principal temple for religious rituals, including elaborate

ceremonies, sacrifices, and the veneration of gold and silver as representations of the sun and moon.

Machu Picchu: While known for its architectural splendor, Machu Picchu also served as a ceremonial site. The Intihuatana stone, believed to have astronomical and ritual significance, was likely used for ceremonial observations related to the sun's movements.

Sacsayhuaman: This site in Cusco was used for religious festivals, including the Inti Raymi, the Festival of the Sun, which celebrated the winter solstice. It involved elaborate ceremonies, dances, and sacrifices to honor Inti.

Ollantaytambo: With its temples, terraces, and water channels, Ollantaytambo was another key ceremonial and religious site where religious activities, rituals, and pilgrimages likely took place.

The Inca made offerings and sacrifices of animals, food, and sometimes even humans as part of their religious practices. Llamas, prized for their significance, were often sacrificed in ceremonies to honor the gods. Human sacrifices, while rare, were carried out on specific occasions to appease the deities or mark significant events.

While a wealth of information exists about Inca religious practices, there are gaps in understanding the specifics of rituals, the symbolic meanings of certain ceremonies, and the exact details of the religious calendar. Interpretations of the significance and functions of various sites are still subject to ongoing research and scholarly debate.

2.4.2 Cultural Aspects

The Inca civilization possessed a rich cultural heritage that encompassed various artistic expressions, oral traditions, music, and societal customs. These elements played a significant role in shaping the identity and fabric of Inca society.

Inca art and architecture were distinctive and visually striking (Nair, 2007). Their architecture, characterized by finely crafted stone structures and elaborate urban planning, displayed remarkable precision and grandeur. The construction of Machu Picchu, Sacsayhuaman, and Ollantaytambo are enduring testaments to their architectural prowess. Intricate textiles, ceramics, and metalwork also reflected their artistic skill, showcasing vibrant colors, complex designs, and fine craftsmanship.

Inca textiles were highly prized and symbolized their cultural identity. Skilled weavers used various materials such as alpaca and llama wool, creating colorful garments and textiles with intricate patterns. The quality of textiles served as a marker of social status and was essential in religious ceremonies, as well as daily attire.

Oral traditions were crucial in preserving historical narratives and passing down cultural knowledge. Inca society maintained an oral tradition of storytelling and oral histories. The use of the *quipu*, a system of knotted strings, also served as a form of communication, recording information such as census data, historical records, and possibly narratives that haven't yet been fully deciphered.

Music and dance were integral parts of Inca cultural expression. Inca musical instruments, such as panpipes, drums, and rattles, were used in various rituals, festivals, and celebrations. Music and dance were often intertwined with religious ceremonies, expressing the spiritual connection with their deities and the natural world.

The Inca society engaged in numerous ceremonial and festive practices. The Inti Raymi, or Festival of the Sun, celebrated the winter solstice and the sun's return. Other festivities involved music, dance, feasting, and the performance of religious rites. These ceremonies reflected their deep connection to nature, the cosmos, and the divine.

Social customs included shared responsibilities and collective work. The concept of "ayllu" emphasized communal living, with families living and working together to support each other. Reciprocity, or "ayni," was a fundamental cultural value, emphasizing the importance of mutual assistance and cooperation within the community.

While much is known about Inca cultural elements, there are gaps in understanding specific artistic symbolism, the precise meanings of certain rituals, and the full extent of

their oral traditions. Interpretations of certain cultural practices and their significance remain subjects of ongoing research and scholarly debate.

2.5 Research Method

Archaeological research on the Inca Kingdom employs a myriad of methodologies, combining traditional excavation techniques with modern scientific analyses to interpret findings. These methods serve to uncover, analyze, and understand the artifacts, structures, and historical contexts associated with the Inca civilization.

Archaeological research methodologies encompass a range of techniques and scientific analyses used to uncover, interpret, and understand the past. When studying ancient civilizations like the Inca Kingdom in Peru, various methods are employed to extract, analyze, and interpret archaeological findings. Here's an essay detailing the methodologies used in archaeological research.

Excavation serves as a primary method for uncovering archaeological remains. Archaeologists use various techniques like stratigraphic excavation, which involves digging in layers to understand the chronological sequence of human activities. Trowels, brushes, and other precision tools are used to carefully expose artifacts and structures without damaging them. Careful documentation through field notes, sketches, and photography accompanies the excavation process.

Radiocarbon dating is a fundamental scientific method used to determine the age of organic material. By measuring the decay of radioactive carbon isotopes (particularly carbon-14) within samples, archaeologists can estimate the age of artifacts, human remains, and structures. Additionally, other scientific dating methods like dendrochronology (tree-ring dating) and thermoluminescence (measuring radiation trapped in crystalline materials) provide complementary chronological data.

Studying artifacts involves various material analysis techniques. This includes examining the composition of artifacts using methods such as X-ray fluorescence (XRF), which identifies chemical elements present in the materials. Microscopic analysis and petrographic studies help identify raw materials, manufacturing techniques, and trace evidence to understand their functions and origins.

Non-invasive surveying methods such as Ground Penetrating Radar (GPR) are used to map subsurface features without disturbing the site. GPR uses radar pulses to detect changes in subsurface materials, helping to identify buried structures or anomalies. Remote sensing techniques like LiDAR (Light Detection and Ranging) and aerial photography provide detailed imaging of landscapes, allowing for identification of ancient roads, terraces, and structures that might not be visible on the surface.

Geographic Information Systems (GIS) are employed to map, analyze, and visualize spatial data. GIS tools allow for the integration of various data sources, aiding in understanding the distribution of sites, land use patterns, and environmental factors that shaped the ancient landscape. It helps to interpret spatial relationships and plan site management strategies.

Ethnographic studies and oral histories contribute to understanding the cultural and social context of archaeological findings. Indigenous narratives, local customs, and traditional knowledge provide insights into the interpretation of artifacts and the reconstruction of past lifeways and practices.

Archaeological research faces challenges such as preservation concerns, limited access to certain sites, ethical considerations, and the complexity of interpreting ambiguous findings or inscriptions. Additionally, interdisciplinary collaboration may encounter difficulties due to different interpretations and methodologies across disciplines.

3. Results and Discussion

3.1 Result

The analysis of the Inca Kingdom in Peru through archaeological, historical, and anthropological lenses has unveiled a multitude of findings, significantly contributing to our

broader comprehension of this ancient civilization. These findings hold immense significance in understanding the cultural, social, and political intricacies of the Inca Kingdom and its place in history.

The grandeur of architectural structures like Machu Picchu, Sacsayhuaman, and Ollantaytambo demonstrates the Inca's remarkable engineering skills, sophisticated urban planning, and adaptability to challenging terrains. These feats have challenged conventional understanding, highlighting the exceptional capabilities of ancient civilizations.

The layout of cities, ceremonial centers, and administrative structures discovered through excavations signifies the centralized governance and hierarchical society under the rule of the Sapa Inca. These findings offer insights into the political, administrative, and religious systems that governed the Inca society.

Artifacts, ceremonial sites, and the intricate craftsmanship in religious relics like the Intihuatana stone at Machu Picchu reveal the significance of religious beliefs and the deep-rooted connection between the Inca people and their cosmological world. Understanding their reverence for nature and the sun god, Inti, provides insight into their spiritual practices and worldviews.

Analyses of agricultural terraces, storage facilities, and tools showcase the Inca's innovative agricultural practices and resource management systems. Their efficient use of terracing and diverse crop cultivation, as well as the strategic "vertical archipelago" model, display their sustainable agricultural methods and adaptability to various ecological zones.

Pottery, textiles, and artwork exemplify the Inca's artistic finesse and cultural expressions. These artifacts reveal their societal norms, craftsmanship, and the value they placed on art and cultural traditions.

The comprehensive understanding derived from these findings significantly contributes to broader academic discourse, not only shedding light on the Inca Kingdom's cultural, social, and political intricacies but also offering broader insights into ancient civilizations, architectural achievements, agricultural innovations, and indigenous cultures.

The significance of these findings extends beyond the understanding of a singular civilization, aiding in enriching the wider discussions on ancient societies, sustainability, urban planning, and indigenous cultures. These findings underscore the enduring legacy of the Inca Kingdom and its immense contributions to the broader understanding of human history and cultural diversity. The depth and breadth of these archaeological discoveries continue to shape our understanding of the Inca Kingdom and its place in the tapestry of human civilization.

3.2 Discussion

3.2.1 The Implications Drawn from Archaeological Findings

The implications drawn from archaeological findings provide invaluable insights into the history and culture of the Inca civilization, shedding light on its societal structures, cultural practices, and architectural marvels. Examining these implications offers a profound understanding of the Inca history and cultural legacy, impacting how we perceive and appreciate this ancient civilization.

Archaeological evidence, such as the layout of cities, structures, and administrative centers, unravels the hierarchical social structure and centralized governance of the Inca society. These findings provide a clearer understanding of the societal hierarchy, administrative systems, and the influence of the ruling elite in governing the empire.

The discoveries of ceremonial sites, religious artifacts, and the intricate stonework like the Intihuatana stone showcase the deep-rooted spiritual beliefs and cosmological significance in Inca culture. These findings deepen our understanding of their religious practices, reverence for nature, and the sacred connection between the spiritual and physical worlds.

Insights derived from agricultural terraces, storage facilities, and artifacts highlight the Inca's innovative agricultural practices. Their advanced methods in terracing, diverse

crop cultivation, and resource management systems demonstrate a sustainable approach to agriculture, contributing to our knowledge of ancient farming techniques and environmental adaptation.

Artifacts such as pottery, textiles, and artwork illuminate the Inca's cultural norms and artistic achievements. Understanding their craftsmanship, societal roles, and the significance of art within their culture enriches our appreciation of their creative expressions and cultural identity.

The implications of these findings contribute to the preservation and appreciation of the Inca cultural legacy. By unraveling their societal structures, religious beliefs, economic systems, and artistic expressions, these discoveries enrich our understanding of the Inca cultural identity and its enduring legacy.

The implications of archaeological findings also hold relevance in contemporary discussions on sustainability, indigenous cultures, and urban planning. Understanding the Inca's sustainable agricultural practices, architectural achievements, and societal organization provides inspiration for modern sustainability and urban planning models.

3.2.2 Significantly Contribute

The findings derived from archaeological research significantly contribute to a holistic understanding of the Inca Kingdom, providing insights into their social structure, economy, religion, and daily life. These discoveries shed light on various facets of the Inca civilization, offering a comprehensive perspective on their societal complexities and cultural practices.

Archaeological evidence, including the layout of cities, administrative centers, and artifacts, elucidates the Inca social hierarchy. These findings reveal a highly structured society governed by a centralized system under the rule of the Sapa Inca. The planned city layouts, strategic locations of administrative centers, and the presence of ceremonial structures signify the societal organization and the authority of the ruling elite.

The examination of agricultural terraces, storage facilities, and trade goods provides significant insights into the Inca economy and resource management. The innovative agricultural practices, including terracing, diverse crop cultivation, and the strategic management of resources, demonstrate a well-organized and efficient economic system that sustained the empire.

Discoveries of ceremonial sites, religious artifacts, and architectural features like the Intihuatana stone highlight the centrality of religious beliefs in Inca culture. These findings underscore the importance of their reverence for nature, their cosmological beliefs, and the veneration of deities, particularly the sun god, Inti.

Artifacts such as pottery, textiles, and tools provide a glimpse into the everyday life and cultural practices of the Inca people. The intricacy and symbolism of their craftsmanship, as seen in textiles and pottery, offer insights into their societal roles, artistic expressions, and cultural traditions.

The architectural remains and engineering feats of structures like Machu Picchu, Sacsayhuaman, and Ollantaytambo showcase the Inca's mastery in construction and urban planning. These findings reflect not only their advanced engineering skills but also their understanding of landscape adaptation and the creation of well-organized urban spaces.

The cumulative findings significantly contribute to our understanding of the Inca Kingdom's complexities, fostering a more nuanced comprehension of their social, economic, religious, and daily life practices. They offer broader insights into the cultural identity and historical legacy of the Inca civilization, contributing to our understanding of ancient societies and their impact on human history.

3.2.3 The Lasting Impact of The Inca Civilization on The Cultural and Historical Identity

The architectural achievements of the Inca civilization, notably Machu Picchu, Sacsayhuaman, and Ollantaytambo, stand as enduring testaments to their engineering prowess and urban planning. These monumental structures continue to attract global

admiration and awe, contributing significantly to Peru's cultural identity and serving as iconic representations of its rich historical heritage.

The cultural practices and traditions of the Inca civilization, evident in their intricate textiles, pottery, and artisanal craftsmanship, persist in the cultural fabric of modern-day Peru. Elements of their traditional practices, weaving techniques, and cultural symbolism continue to shape the country's artistic heritage and serve as symbols of national pride and identity.

The Inca's reverence for nature, cosmological beliefs, and religious practices still resonate in Peruvian culture. Their spiritual connection to the land, mountains, and sun continues to influence indigenous perspectives and spiritual practices, preserving a connection to their ancient heritage.

The innovative agricultural practices of the Inca, such as terracing and diverse crop cultivation, have left a lasting impact on Peru's agricultural heritage. These methods, developed to adapt to various ecological zones, continue to influence contemporary agricultural practices, sustainability, and land management in the region.

The globally recognized archaeological sites of the Inca civilization, like Machu Picchu, draw millions of tourists annually, fostering an appreciation for Peruvian history and cultural identity. These sites serve as symbols of national pride, contributing to Peru's identity and recognition on the world stage.

The legacy of the Inca civilization extends beyond Peru, influencing global understanding and appreciation of ancient cultures. Their innovative achievements in architecture, engineering, and sustainable practices continue to inspire and educate people worldwide, contributing to global cultural heritage and historical knowledge.

3.2.4 The Inca Civilization and Its Findings Influence Contemporary Culture, Society, And Historical Perspectives

The Inca civilization and its archaeological findings continue to exert a substantial influence on contemporary culture, society, and historical perspectives, contributing to a deeper understanding of the past and impacting modern viewpoints in numerous ways.

The legacy of the Inca civilization has a profound impact on the cultural identity of Peru and neighboring regions. Their artistic heritage, as seen in textiles, pottery, and craft traditions, continues to inspire contemporary artisans, shaping the artistic landscape and fostering a connection to ancient cultural practices.

The Inca's innovative agricultural methods, particularly their terracing and land management techniques, have influenced contemporary practices in agriculture and sustainability. Lessons learned from their approach to environmental adaptation and resource management continue to inspire modern strategies for sustainable living and agriculture.

The globally renowned archaeological sites of the Inca civilization, notably Machu Picchu, attract millions of visitors annually. This significant tourism contributes to Peru's economy, impacting local communities and reinforcing the cultural and historical significance of these sites on a global scale.

The architectural achievements of the Inca, with their precisely cut stone structures and complex urban planning, inspire contemporary architects and engineers. The techniques used in the construction of structures like Machu Picchu influence modern architectural practices and offer insights into ancient engineering marvels.

The Inca civilization continues to influence indigenous perspectives and cultural preservation efforts. Their spiritual beliefs, cosmological connections, and respect for nature persist in indigenous cultures, contributing to the preservation of traditional knowledge and practices.

The study of the Inca civilization challenges and reshapes historical narratives, offering alternative perspectives on pre-Columbian history. Ongoing research and reinterpretation of findings contribute to a more comprehensive understanding of ancient civilizations and their impact on world history.

The archaeological findings and the legacy of the Inca civilization play a crucial role in education and public understanding of history. They contribute to a broader awareness of ancient cultures, inspiring curiosity and interest in historical and cultural heritage.

4. Conclusions

The legacy of the Inca civilization, as unveiled through extensive archaeological research, stands as a testament to their remarkable achievements and enduring impact on the world. The comprehensive analysis of their architectural wonders, social structure, cultural practices, and economic systems has significantly enriched our understanding of this ancient civilization. The Inca Kingdom's contributions continue to resonate in contemporary society, influencing art, agriculture, sustainability, and historical perspectives. In exploring the Inca Kingdom in Peru based on archaeological findings, we embark on a journey that transcends time and reveals the complex tapestry of an ancient civilization. The archaeological evidence, as well as the historical and anthropological perspectives, converge to provide a multidimensional understanding of the Inca civilization's history, culture, and enduring legacy. Through meticulous excavation, analysis of artifacts, and technological advancements like LiDAR and ground-penetrating radar, we have unveiled the architectural marvels of Machu Picchu, Sacsayhuaman, and Ollantaytambo. These monumental structures serve as lasting testaments to the Inca's engineering prowess and urban planning skills, captivating the world and symbolizing Peru's rich historical heritage. The archaeological discoveries offer a window into the Inca society's social structure, highlighting their hierarchical organization and centralized governance. Their religious beliefs, intertwined with nature and cosmology, are evident in ceremonial sites and intricate stonework. The Inca's advanced agricultural practices, showcased through terracing and resource management, present a blueprint for sustainable living and environmental adaptation. The Inca civilization's artistic expressions, such as textiles, pottery, and craft traditions, continue to shape contemporary culture and artistic heritage. Their impact on modern society extends to the fields of agriculture, sustainability, architecture, and indigenous perspectives, influencing both local and global communities. The enduring legacy of the Inca civilization stretches beyond the confines of time and geography, leaving an indelible mark on our understanding of history and cultural diversity. It shapes the cultural identity of Peru and resonates in the hearts of people worldwide. The Inca civilization inspires contemporary society to embrace sustainable living, preserve cultural heritage, and reevaluate historical narratives. The Inca Kingdom's archaeological findings serve as a bridge between the past and present, connecting us to the ingenuity, spirituality, and resilience of a remarkable civilization. Their legacy endures, continuing to influence and enrich contemporary culture, society, and our collective perspectives on history and the human experience.

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