

8

by 27 Perpustakaan UMSIDA

---

**Submission date:** 28-Feb-2024 04:43PM (UTC+0700)

**Submission ID:** 2306841710

**File name:** loring\_Kahuripan\_Airlangga\_Sidoarjo\_Culture\_through\_Literacy.pdf (328.22K)

**Word count:** 3934

**Character count:** 22738



# Exploring Kahuripan Airlangga Sidoarjo Culture through Literacy

Vidya Mandarani<sup>1</sup>, Detak Prapanca<sup>2</sup>, Ali Akbar<sup>3</sup>, Djoko Susilo<sup>4</sup>, and Raras Hafidha Sari<sup>5</sup>

<sup>1,2,3</sup> Universitas Muhammadiyah Sidoarjo, East Java 61215, Indonesia

<sup>5</sup> Universitas Hasyim Asy'ari Jombang, East Java 61471, Indonesia

vmandarani@umsida.ac.id

**Abstract.** Kahuripan Airlangga Sidoarjo culture is still a piece that has yet to be integrated into a series of valuable works that the public can enjoy. This research aims to explore the Kahuripan Airlangga Sidoarjo culture through literacy to gain more information about the history of Kahuripan Airlangga. The method used was a qualitative case study by conducting observations and interviews with the Sidoarjo Arts Council (Dekesda) to explore the Kahuripan Airlangga culture. The results showed that cultural activists who observed cultural sites, such as the Kamalagyan Inscription, found a series of royal stories in Sidoarjo. In terms of activities, a Wayang Silat Jawosogo show is taken from the story of Tambak Kalisogo village. The participation of all parties is still needed to trace the cultural literacy of Kahuripan Airlangga Sidoarjo. It is expected that the complete data will become a historical document describing the glory of the Kahuripan Airlangga so that the younger generation can understand the cultural history of the nation, as well as appreciate the local wisdom of Sidoarjo.

**Keywords:** Culture, Kahuripan Airlangga Sidoarjo, Literacy.

## 1. Introduction

The rise of media as a significant influence on human life has contributed to literacy development. Therefore, we must strive to cultivate literacy in Indonesia so that students can make reading and writing activities a scientific tradition and discussions their routine. To enhance the quality of education and resources generated during the learning process, the government achieved a significant milestone by implementing a mass school literacy movement. It promotes literacy among the Indonesian nation's golden generation, fulfilling their need for information and reading [1], [2].

Notably, cultural literacy is an approach to understanding the social and cultural factors that influence our lives. It includes bodies of knowledge, social practices, individual and group identities, and cultural artifacts. It involves comprehending and analyzing various cultural manifestations, including cultural artifacts, through applying skills and knowledge intrinsic to Literary and Cultural Studies. The perspective views these elements as comprehensible through reading or interpretation. It provides a method for

© The Author(s) 2023

A. Ambarwati et al. (eds.), *Proceedings of the 3rd International Conference on Language, Literature, and Cultural Education (ICON-LLCE 2023)*, Advances in Social Science, Education and Humanities Research 796, [https://doi.org/10.2991/978-2-38476-144-9\\_24](https://doi.org/10.2991/978-2-38476-144-9_24)

examining social and cultural phenomena, focusing on issues of change and mobility through a literary lens [3], [4].

In this article, the researchers are eager to explore Sidoarjo culture because some Sidoarjo villages have fascinating folklore, an agricultural heritage, a trading history that spanned rivers, and a religious institution that persisted despite the community's shift from Hinduism to Islam. Three defining characteristics endure in Sidoarjo: agriculture, commerce, and spiritual practice. These three traits have persisted since the Kahuripan Airlangga, Majapahit, and Islamic eras through to the present day. Oral folklore (or origin stories) is passed down across generations. These stories contain valuable wisdom to be explored as an alternative approach to independent learning and have meaningful and philosophical values regarding social justice [5].

The existence of Kahuripan culture can be explored by recording information from historians and culturalists about the early history of Kahuripan culture in Sidoarjo. Cultural research is also done by observing historical sites related to the history of Kahuripan Airlangga, such as the Kamalagyan inscription, Dermo Temple, and other historical sites. Furthermore, the observation and cultural exploration results of Kahuripan Airlangga were studied in-depth by conducting discussions with experts to formulate findings in the form of written literacy about the history of Kahuripan Airlangga in Sidoarjo. The findings were developed into folklore, poetry, film, and story ideas in a theater about the history of Kahuripan Airlangga Sidoarjo.

Kahuripan (aka Medang Kamulan) was one of the largest kingdoms led by Prabu Airlangga (990-1049 AD) during the 11th century [6]. Prabu Airlangga was not only the founder of the kingdom. He also ruled it as the solitary king. Initially, the jurisdiction of Kahuripan only covered Sidoarjo, Pasuruan, and parts of Mojokerto. Airlangga explains the royal dispute over the creation of Kahuripan. This dispute led to the division of the kingdom into Daha and Jenggala [7]. Several historians claim that Kahuripan was situated in the current Sidoarjo area, as documented in the Kamalagyan inscription, which remains preserved in the Krian-Sidoarjo area. Airlangga's great civilization should be a source of cultural pride for the people of Sidoarjo, and the story of Sidoarjo residents who inherited King Airlangga's charm can serve as a basis for excellent literacy through folklore studies. The relics of Kahuripan, such as the Kamalagyan Inscription, Reog Cemandi, and Wayang Gagrang Porongan, hold great potential for inspiring literary works that contribute to preserving the original Sidoarjo culture.

Hanindita [8] analyzed the importance of heroism in Kyai Hasan Mukmin and the potential use of heroic values as teaching material. The study discovered that the heroic virtues inherent to Kyai Hasan Mukmin consisted of tenacity, self-sacrifice, leadership, role model, perseverance, relentless, and pioneer. These heroic values are helpful as teaching materials for character education described through the narrative text entitled "Kyai Hasan Mukmin, Hero of Sidoarjo." This study focuses on how the Sidoarjo Art Council (Dekesda) oversees all activities related to arts and culture in Sidoarjo.

## 2. Method

This study is qualitative case research. Baxter and Jack described investigating linguistic phenomena, social identity, digital and spatial analysis, and multimodal texts using creative literacy practices [9]. A case study was selected as appropriate for examining how the culture of Kahuripan Airlangga Sidoarjo is explored through literacy. To collect information, the researchers used observation and unstructured in-depth interviews to investigate the process of exploring Kahuripan Airlangga culture in Sidoarjo. The research participants are three people from the literary department. The following is the instrument used to collect data. This instrument comprises actors, various activities, target groups, and partners adapted from Kurnia and Astuti[10].

**Table 1.** Research Instrument

No.	Indicators	Questions
1.	Cultural Literacy forms	<ol style="list-style-type: none"> <li>1. What are the forms of cultural literacy in Kahuripan Airlangga Sidoarjo?</li> <li>2. How can cultural mapping be conducted in Kahuripan Airlangga Sidoarjo?</li> </ol>
2.	Actors	<ol style="list-style-type: none"> <li>1. Who are the actors involved in exploring Kahuripan Sidoarjo culture?</li> <li>2. How do Sidoarjo's cultural actors contribute to the development of cultural literacy?</li> </ol>
3.	A range of activities	<ol style="list-style-type: none"> <li>1. How does the exploration of Sidoarjo's cultural arts take place? Explain some of the activities in detail.</li> <li>2. How can we improve the quality of cultural exploration?</li> <li>3. How can the cultural exploration of Sidoarjo be improved? Explain in detail the activities that have been done.</li> <li>4. How can we improve the quality of cultural exploration in Sidoarjo?</li> </ol>
4.	Target groups and partners	<ol style="list-style-type: none"> <li>1. Who manages Kahuripan Airlangga Sidoarjo's cultural exploration activities?</li> <li>2. Who are the current participants in the cultural exploration activities of Kahuripan Airlangga Sidoarjo?</li> <li>3. Does the Sidoarjo community actively participate in activities organized by the Sidoarjo Dekesda related to the development of Kahuripan Airlangga cultural literacy?</li> <li>4. How do you plan to continue the current activities?</li> <li>5. What are your expectations for Kahuripan Airlangga Sidoarjo's cultural literacy development?</li> </ol>

Collecting data starts with identifying the case study—exploring <sup>1</sup>the cultural literacy of Kahuripan Airlangga Sidoarjo. The collected data is then analyzed in the following steps: Once interviews are conducted, the data is transcribed and condensed. The observation results are reduced by selecting those in line with the research theme and the results of the research subjects' interviews. The data is in four main categories: actors, activities, target groups, and partners in Kahuripan Airlangga culture in Sidoarjo.

### 3. Findings and Discussion

#### 3.1. Cultural Literacy Forms

During the reign of King Airlangga in the Kahuripan Kingdom, several inscriptions were issued, including the Kamalagyan inscription of 1037 AD. It indicates his success in reconciliation and advancement. Besides Kamalagyan, there were multiple inscriptions published during King Airlangga's reign, including the Kakurugan I (1023 AD / 945 Saka), Kakurugan II (1023 AD / 945), Terep I (1032 AD / 954 Saka), and Terep II (1023 AD / 945 Saka) (Astriana and Wisnu 2019). The findings showed that the cultural literacy of Kahuripan Airlangga Sidoarjo in the form of text—reading the Kamalagyan inscription—is still accessible in the Klagen hamlet of Tropodo village, Krian sub-district. Oral narratives, e.g., the Medalem, Pamotan, and Tawang Alun temples, provide additional information.

Dekesda (Sidoarjo Arts Council) is currently conducting a culture mapping project in which data is collected from associations and art communities across Sidoarjo. Those communities are invited to fill out printed or online forms. Findings identify characteristics of art and culture groups or individuals who contribute to Kahuripan Airlangga culture.

#### 3.2. Actors

Many cultural and historical communities and Macapat associations actively explore Kahuripan culture. It is one of the contributions of Sidoarjo's active cultural arts actors in developing cultural literacy by collecting historical data through relics of historical objects, including inscriptions, temples, building ruins, *serat babad*, and more. In developing cultural literacy, the Macapat society made songs related to Kahuripan's themes and later performed them. The younger generation requires knowledge about local wisdom to establish the original character of their community's culture. Ancestors pass this knowledge down, and it has been adapted to the community's conditions. A performance with local wisdom creates an understanding and appreciation for the meaning of folklore and improves thinking skills that enable the interpretation of legends. For instance, presenting the folklore *Sarip Tambak Oso* among two generations of young children at the TK Dharmawanita Persatuan I Terung Kulon 1 Krian [11].





**Fig**

**Figure. 1.** Dekesda's R&D team observed the Kamalagyan Inscription.

Figure 1 portrays the R&D team of Dekesda observing the Kamalagyan inscription. The Council visited the area, arranged cultural events, and researched oral stories connected to the Kahuripan artifacts. The team found that the Kediri Kingdom issued this inscription to regulate the waters of the Brantas River. This inscription contains news about improving transportation facilities on the Brantas River to facilitate the transportation of trade goods from upstream to downstream areas in Hujung Galuh. King Airlangga ordered the construction of the Waringin Saptad Dam to improve the water transportation route.

In addition, the source of cultural stories can serve as inspiration for developing teaching materials in schools. Anwar, Ardhiyanti, and Astuti [12] conducted a Writing Story Training for Kindergarten and Elementary School teachers in Wonomlati village, Krembung, Sidoarjo, on the subtheme of Plot Development. It is noteworthy to understand better the concept of crafting stories for children, particularly related to language, story content, and character development. After comprehending various concepts, the participants practiced creating a chronological sequence of events to develop the storyline. The story sequence was then balanced with descriptions and dialogue while still paying attention to language, character, and character education emphasized for children.

### **3.3. Range of Activities**

The historical community of Sidoarjo has collected extensive data and analyzed historical and cultural artifacts through discussion. Figure 2 below shows the Paguyuban Sloko Gading activities: Kahuripan Majapahit Cultural Workshop. Based on the

interviews with the chairman of the Sidoarjo Arts Council, the key to enhancing the quality of cultural arts exploration lies in studying the Kahuripan cultural heritage, including both physical and folklore aspects, to create new works of art that can be utilized for learning and economic development. It is imperative to preserve and protect this heritage and interpret it to convey its significance and value to future generations. Maulana and Lodra investigated the relationship between empirical experience and character development in fine art [13]. The study revealed that all artists-generated artworks entail exploring and reinterpreting symbols, myths, spiritual values, and religious themes in a singular painting.



**Figure. 2.** Sloko Gading society activities: Kahuripan Majapahit Cultural Workshop

Susilo et al. [14] organized a Wayang Silat Jawisogo performance for the community to promote local wisdom and cultural preservation and foster a love for Indonesia among the younger generation of Tambak Kalisogo and Sidoarjo. This activity was conducted to remind the community, especially the present generation, that there was a heroic event in Tambak Kalisogo about the resistance against the Dutch colonizers through Silat Jawisogo. Based on the results of interviewing the Wayang Silat Jawisogo makers, the information obtained is that the Silat Jawisogo story has similarities with the Sarip Tambak Oso story, namely

hting colonialism and resisting injustice [14]. The Silat Jawisogo story has existed for a long time but only as an oral story with few narrators. The story was obtained from Mrs. Alimah, a kindergarten teacher in Tambak Kalisogo village, who told the story from the beginning of the establishment of Tambak Kalisogo village to the struggle against the Dutch colonizers.



**Figure. 3.** The appearance of Wayang Silat Jawisogo

The village of Tambak Kalisogo, a village in the Jabon subdistrict of Sidoarjo, inspired the puppets shown in Figure 3. The village is located near the coastal ponds and is divided by the Porong River. This story is based on an oral story without text, which is then told by puppets. In addition, Pratama and Islam also researched the Banjar Kemuning Dance, a traditional female dance from Sidoarjo, the shrimp city. The comic is optimized for gadget users as it is elongated downward for ease of use on the Webtoon app and is aimed at young comic enthusiasts [15].

### 3.4 Target Groups

Active participants in the Kahuripan Airlangga Sidoarjo Cultural Art Exploration activities include history and art enthusiasts, students, teachers, lecturers, and professionals from various backgrounds. Despite the small number of active participants compared to the total population of Sidoarjo, the community has not yet recognized Sidoarjo's potential as the inheritor of the great Kahuripan culture. The plan for 2024 is to hold several festivals that embody the spirit of Kahuripan civilization and utilize Kahuripan-related skills, including the Kahuripan Keroncong Music Festival, Wayang Porongan Parade, Kahuripan Gamelan Generation Festival, and Kahuripan Painting Art Market. It is expected that there will be cooperation with community partners who can transfer the knowledge of Kahuripan literacy skills to each other so that the activity plan can feel the character of the Kahuripan.





**Figure. 4.** Paguyuban Jenggala Manik traces the culture of Kahuripan Airlangga.

Tracing cultural sites is still carried out by cultural activists, as shown in Figure 4, where Paguyuban Jenggala Manik conducts a cultural trail of Kahuripan Airlangga. From the results of interviews with them, some communities have succeeded in finding Mahakala statues and ancient bricks that make up the Kedung Keras temple in Tulangan, Sidoarjo.

Prawoto et al. [16] indicated that literacy is significant in education, particularly for teachers and students. Literacy problems can be addressed by enhancing literacy skills and knowledge in schools, promoting a culture of cooperation among students that emphasizes literacy, fostering more significant interest in reading through skills development, disseminating best practices in literacy education, and building models of practical literacy cooperation, such as among teachers within and across disciplines, between teachers and students, and among students.

Education and culture are closely intertwined, having evolved as human civilization developed. Ideally, the advancement of education should not be dissociated from culture, as education not only preserves and cultivates culture but also serves as a microcosm of communal existence. Education that can foster the next generation should embody values of stability, tolerance, diversity, openness to change, and adaptability. Education and culture are interconnected and should complement each other, adapting to the context of the educational environment. Indonesia's diverse cultural landscape should ideally be the foundation for academic development [17].

Sujantoko et al. [18] examined Sidoarjo Batik in-depth, highlighting that Batik patterns encapsulate philosophical values. It is necessary to preserve them by promoting the interest and passion of the younger generation. One effort involves introducing various marine-themed Batik designs and production processes. The target audience for exploring the culture of Kahuripan Sidoarjo can encompass all levels of society, including cultural proponents and artisans, such as Batik craftsmen from Sidoarjo and others. The goal is for artisans and communities to maintain Batik as the archipelago's top-quality product and cultural heritage.

### 3.4. Partners

The Sidoarjo Ancient Period Historical Society and the Malik Ibrahim Culture House are the most active communities in the scientific study of Airlangga's Kahuripan culture. Cultural activist groups, such as Jagad Suwung, Mojopahit Bangkit, LP2BN, Jenggala Manik, Kinanti, and Sekar Kawedar, explore the philosophies and folklore of Kahuripan-Jenggala-Majapahit through Macapat songs. Dekesda's R&D team gathered data on cultural history with the potential to become works of art to establish the identity of a typical Sidoarjo art character based on the spirit of the great Kahuripan civilization.

Setyorini and Masulah [19] collaborated with five elementary schools under the management of Muhammadiyah Sidoarjo. Two teachers from each school were nominated to participate in a creative writing workshop from July to September 2019. The workshop adopted the Project-Based Learning approach, where the participating teachers developed a children's literature writing project. This activity benefits teachers by familiarizing them with literacy and improving their ability to write children's literature, especially pictures and short stories.

Amandangi, Mulyati, and Yulianeta [20] compiled folklore enrichment materials to improve literacy skills and form literary appreciation experiences for BIPA learners. In designing appropriate materials, conducting a needs analysis activity is necessary so that the enrichment materials designed can be well received. Teachers must prepare folklore enrichment materials to improve literary appreciation and cultural literacy skills. Innovating folklore enrichment materials for BIPA learners in content or knowledge with local wisdom, tourism, and social values is necessary.

## 5. Conclusion

The Sidoarjo Arts Council (Dekesda) has been involved in exploring the cultural heritage of Kahuripan Airlangga in Sidoarjo, along with the historical societies, cultural associations, cultural actors, and even some people from various professional backgrounds who have actively participated. Sidoarjo citizens are willing to become key partners in developing the Sidoarjo Techno Park of Cultural Sciences to deepen the exploration of Kahuripan Airlangga culture through literacy. This cultural literacy study marks the beginning of the creation of historical texts of Sidoarjo Regency, one of which is a historical document describing the glory of the Kahuripan Airlangga Kingdom so that the younger generation can understand the nation's cultural history while appreciating the local wisdom of Sidoarjo.

## References

- [1] I. M. N. Suragangga, 'Mendidik lewat Literasi untuk Pendidikan Berkualitas', *Jurnal Penjaminan Mutu*, vol. 3, no. 2, pp. 154–163, 2017.
- [2] A. Permatasari, 'Membangun Kualitas Bangsa dengan Budaya Literasi', in *Prosiding Seminar Nasional Bulan Bahasa UNIB*, 2015, pp. 146–156.

- [3] N. Segal, 'From Literature to Cultural Literacy', *Humanities*, vol. 4, no. 1, pp. 68–79, Feb. 2015, doi: 10.3390/h4010068.
- [4] G. G. Ochoa, S. McDonald, and N. Monk, 'Embedding Cultural Literacy in Higher Education: A New Approach', *Intercultural Education*, vol. 27, no. 6, pp. 546–559, Nov. 2016, doi: 10.1080/14675986.2016.1241551.
- [5] J. Susilo, M. Junaedi, F. Tirtoni, S. B. Sarika, C. C. Astuti, and N. Fediyanto, 'Keadilan Sosial Bagi Seluruh Rakyat Indonesia pada Cerita Rakyat dari Desa-Desa di Sidoarjo', *Lingua Franca: Jurnal Bahasa, Sastra, dan Pengajarannya*, vol. 6, no. 1, pp. 33–39, 2022.
- [6] R. Basuki, D. Setiawan, R. Lim, and A. I. Rahardjo, *Warisan Budaya dan Potensi Wisata Desa Begaganlimo*. Surabaya: LPPM-Universitas Kristen Petra, 2020.
- [7] G. Sarmidi and Suryantoro, 'The Power of the King of Java in the Indonesian Novel', in *2nd Annual Conference on Social Science and Humanities*, Atlantis Press, 2020, pp. 225–229.
- [8] A. W. Hanindita, 'Eksplorasi Nilai Kepahlawanan Kyai Hasan Mukmin Daerah Sidoarjo sebagai Bahan Pendidikan Karakter', *Jurnal Ilmiah Program Studi Pendidikan Bahasa dan Sastra Indonesia*, vol. 6, no. 2, pp. 161–176, Oct. 2021, doi: 10.32528/bb.v6i2.5786.
- [9] P. Baxter and S. Jack, 'Qualitative Case Study Methodology: Study Design and Implementation for Novice Researchers', *The Qualitative Report*, vol. 13, no. 4, pp. 544–559, Jan. 2008, doi: 10.46743/2160-3715/2008.1573.
- [10] N. Kurnia and S. I. Astuti, 'Peta Gerakan Literasi Digital di Indonesia: Studi Tentang Pelaku, Ragam Kegiatan, Kelompok Sasaran dan Mitra', *INFORMASI: Kajian Ilmu Komunikasi*, vol. 47, no. 2, pp. 149–166, 2017.
- [11] J. Susilo and N. Fediyanto, 'Pembangunan Karakter Kearifan Legenda Sarip Tambak Oso Bagi Generasi', *ABADIMAS ADI BUANA*, vol. 02, no. 1, pp. 21–27, 2018.
- [12] M. S. Anwar, M. Ardhianti, and S. B. Astuti, 'Pengembangan Alur dalam Penulisan Cerita Bagi Guru-Guru di Desa Wonomlati, Kecamatan Krembung, Kabupaten Sidoarjo', *Pancasona: Pengabdian dalam Cakupan Ilmu Sosial dan Humaniora*, vol. 2, no. 1, pp. 151–160, 2023.
- [13] R. Maulana and I. N. Lodra, 'Eksplorasi Nilai-Nilai Spiritual Masyarakat Jawa dalam Bentuk Seni Lukis', *Jurnal Seni Rupa*, vol. 3, no. 1, pp. 49–62, 2022, [Online]. Available: <https://ejournal.unesa.ac.id/index.php/sakala/issue/view/2523>
- [14] J. Susilo, V. Mandarani, and M. Junaedi, 'Wayang Silat Jawisogo Sebagai Pendidikan Karakter Cinta Tanah Air Berbasis Kearifan Lokal Generasi Muda Sidoarjo', *Jurnal Pengabdian Kepada Masyarakat*, vol. 4, no. 1, pp. 143–152, 2020, [Online]. Available: <http://ejournal.ikipgribojonegoro.ac.id/index.php/J-ABDIPAMAS>
- [15] F. H. Pratama and M. A. Islam, 'Pengenalan Tari Banjar Kemuning Melalui Komik Digital dalam Platform Webtoon', *Jurnal Barik*, vol. 5, no. 1, pp. 222–235, 2023, [Online]. Available: <https://ejournal.unesa.ac.id/index.php/JDKV/>

- [16] E. C. Prawoto, M. S. Anwar, and L. I. Kulup, 'Membangun Jaringan Kerjasama Melalui Budaya Literasi Sekolah di SMP Negeri 2 Sukodono Kabupaten Sidoarjo', *Kanigara: Jurnal Pengabdian kepada Masyarakat*, vol. 2, no. 1, pp. 238–246, 2022.
- [17] D. Nurcholis, *Transformasi Pendidikan Multikultural di Sekolah*. Pasuruan: Parasurama Education, 2019.
- [18] S. Sujantoko *et al.*, 'Produksi Batik Motif Kelautan di Kampung Jetis Sidoarjo', *SEWAGATI: Jurnal Pengabdian kepada Masyarakat*, vol. 5, no. 3, pp. 217–226, Oct. 2021, doi: 10.12962/j26139960.v5i3.27.
- [19] A. Setyorini and M. Masulah, 'Penerapan Project Based Learning untuk Meningkatkan Kemampuan Guru-Guru Sekolah Dasar Sidoarjo dalam Menulis Kreatif Cerita Anak', *Aksiologi: Jurnal Pengabdian Kepada Masyarakat*, vol. 4, no. 1, pp. 131–137, Feb. 2020, doi: 10.30651/aks.v4i1.3664.
- [20] D. P. Amandangi, Y. Mulyati, and Y. Yulianeta, 'Cerita Rakyat sebagai Bahan Pengayaan Literasi Budaya Bagi Pemelajar BIPA Tingkat Menengah', *Jurnal Pendidikan Bahasa dan Sastra*, vol. 20, no. 2, pp. 157–166, 2020, doi: 10.17509/bs\_jpbsp.v20i2.33056.

**Open Access** This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.





---

ORIGINALITY REPORT

---

8%

SIMILARITY INDEX

8%

INTERNET SOURCES

0%

PUBLICATIONS

0%

STUDENT PAPERS

---

PRIMARY SOURCES

---

1

[www.atlantis-press.com](http://www.atlantis-press.com)

Internet Source

8%

---

Exclude quotes Off

Exclude matches < 2%

Exclude bibliography On