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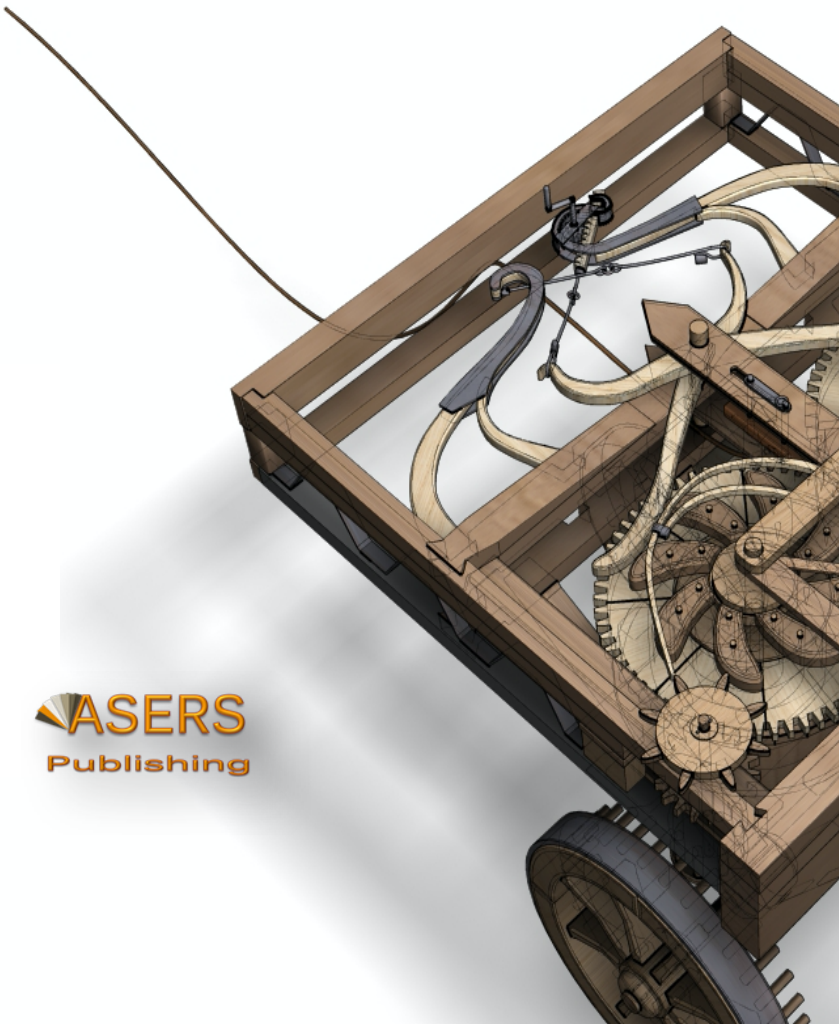

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The Impact of Marine Ecotourism Development in Rupat Island Indonesia

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Abstract:

The tourism sector has made considerable contributions to the realization of economic equality, especially among the community living in coastal areas who are highly dependent on marine resources. This research was conducted in July 2022 in the marine ecotourism area of Rupat Island, Riau Province to analyze the impact of developing marine ecotourism on Rupat Island. Primary and secondary data collected through surveys were analyzed using the multiplier effect analysis. The results of the analysis resulted in a Keynesian Income Multiplier value of 1.03, indicating an increase in the income of workers and business owners in the marine ecotourism area of Rupat Island. The increase was to be 1.03 rupiah and with Income Multiplier Type I ratio of 1.07 and Type II ratio of 1.09. It can be taken into conclusion that the tourism activities on Rupat Island bring effects on the local community.

Keywords: impacts; marine ecotourism; multiplier effect; Rupat Island.

JEL Classification: Q26; Q56; Q21; O11; R11.

Introduction

Rupat Island in Riau Province is one of the most visited tourist spots by both domestic and international tourists. Rupat Island is located in Certain National Strategic Area with a total area of 14,133.50 hectares of northern waters as a water conservation area. Rupat Island is located in a strategic location where the world's busiest international shipping occurs in the Malacca Strait and is inside the triangle area of economic growth among Indonesia - Malaysia - Singapore and Indonesia - Malaysia - Thailand (Rudiany & Anugrah 2020).

Rupat Island is a well-known natural tourism attraction. Considering the potentials of this coastal area, it becomes necessary to develop the marine tourism of the area. Rupat Island marine ecotourism provides many benefits to the local community as seen from the economic value that reached IDR 1,507,554,457.51, - with a consumer suIDRlus value of IDR 427,140.43 per individual per visit. Therefore, the development of ecotourism in Rupat Island is beneficial (Warningsih, *et al.* 2021). The potential of marine ecotourism on Rupat Island can be

optimized. This research was conducted to analyze the economic impacts of marine ecotourism development in Rupat Island, Riau, Indonesia.

1. Literature Review

Ecotourism is a concept of tourism that concerns for the sustainability of coastal natural resources with an environmental service system that prioritizes coastal natural resources as service objects that are the main economic source of Indonesian society (Yulianda, *et al.* 2010 and Marfai, *et al.* 2019). The increasing public interest in nature tourism has encouraged the acceleration of various tourism activities, including ecotourism which in general also gives added value to the local economy and the coastal areas ((Franco,*et al.* 2019); (Suprayogi, *et al.* 2020) and (Lu, *et al.* 2019). Although tourism provides job opportunities, increases the community's income, quality of life, and even stimulate other sectors (Tatarusanu, 2016) and (Eslami, *et al.* 2019), it can bring major impacts on the ecosystem sustainability (Gerungan & Chia, 2020).

The development of marine tourism in this area can have a positive effect on the community and the environment. To create a sustainable and effective marine ecotourism management, the integration of community and ecological systems is important (Marconi, *et al.* 2020); (Gerungan & Chia, 2020) dan (Naja, *et al.* 2021). In Bali, for example, the tourism has more positive impacts on the economy and socio-culture yet it poses negative impacts on the environmental (Ernawati, *et al.* 2018).

2. Methodology

This research was conducted in July 2022 in the marine ecotourism area of Rupat Island, including Ketapang Beach, Tanjung Medang, Rhu Bay and Lapin Cape located in Rupat and North Rupat Districts. Primary data and secondary data were collected through surveys conducted with 21 respondents who traded and worked around the tourist. Primary data were obtained from direct interviews with respondents using questionnaires as the guidelines. The respondents were owners of local enterprises and workers of local enterprises around Rupat Island Ecotourism area. Meanwhile, secondary data were retrieved from Statistics Indonesia, Department of Tourism, Culture, Youth, and Sports of Bengkalis Regency in the forms of books, journals, sources from the Internet and other relevant resources. A qualitative descriptive method was employed to examine the humans, an object, thoughts, circumstances, and phenomena in the future (Sugiyono 2015). This method also describes a fact related to the event being studied.

The existence of ecotourism attraction driver economic activities that can benefit the local community. The economic impacts of tourism can be categorized into direct impact in the form of nett earning for business owners, indirect impacts in the forms of earnings gained by workers and operational cost, and extended impact in the form of employment.

The impact of tourists' spending on the local economy can be measured by calculating the value of the multiplier effect. There are two types of multiplier effects as mentioned by META (2001) used to measure the economic impact of tourism on the local community's economy, namely: 1) Keynesian Local Income Multiplier Effect, which is a value that shows the extent to which tourist spending increase local people's income; and 2) Income Multiplier Ratio, referring to a value that shows the strength of the direct impact of tourist spending on the local economy. Those values can be measured using the following formula.

Keynesian Income Multiplier= $\frac{D+N+U}{E}$

Ratio Income Multiplier, Tipe I = $\frac{D+N}{U}$

Ratio Income Multiplier, Tipe II = $\frac{D+N+U}{D}$

Remarks:
E = extra spending (IDR)
D = direct local earning (IDR)
N = indirect local earning (IDR)
U = induced local earning (IDR)

Decision premise:
1) If the nilai *Keynesian Income Multiplier, Ratio Income Multiplier* Type I and II ≤ 0, the area does not give significant economic impacts for the local community.
2) If the value is between 0 and 1 ($0 \leq x \leq 1$), the area gives low impacts
3) If the value ≥ 1, the impact of the area is significant for the surrounding community.

3. Result and Discussion

3.1 The Marine Ecoutourism Potentials of Rupat Island

Rupat Island has a land area of 1.500 km^2 that is significantly wider than Bengkalis Island which city center and government center of the Regency are located. Rupat Island is very exotic, with attractive white sand and a view of ships passing through the Malacca Strait. The island has natural beauties, marine tourism objects and other recreational spots as favorite tourist attractions set by the regional government in Riau Province.

Rupat Island offers beautiful natural charm which can be the potential economic resource for it is located in the Malacca Strait – the route of international ships. The atmosphere on the coastal areas feels refreshing with the many types of shady mangrove trees along the coastline. There are lots of small animals that are occasionally seen gathering and forming an arrangement that causes the color on the coast to look red which make this beach unique.

Figure 1. The Atmosphere at Rupat Island Beach

3.2 The Impacts of Rupat Island Marine Ecotourism on the Economy of the Community

The marine ecotourism in Rupat Island which is very close to where the community lives has both positive and negative impacts. One of the positive impacts is in the improvement in community's economy where business activities in tourist areas can be the source of income. On the other side, many people work as fishermen who depend on natural resources. The earning from tourism activities can increase the standard of living of the community. (Hermawan 2016) stated that the development of tourist villages has a positive impact on the economic development of local communities in Nglanggeran Village, including increasing community income, employment opportunities and business opportunities.

Table 1. The Number of Respondents who Own Business Units

No.	Business Type	Number	Percentage
1	*Homestay*	4	19.05
2	Street Vendor	8	38.10
3	Coastal Vehicle	1	4.76
4	Canoe and Boat Rent	1	4.76
5	Banana Boat Rent	1	4.76
6	Fish Crisp Product	3	14.29
7	Crossing Service	2	9.52
8	Camping Equipment Rent	1	4.76
	Total	**21**	**100.00**

Source: Primary Data Processed (2022)

As seen in Table 1, the community has started to open various businesses in the marine ecotourism areas on Rupat Island. Most of them have become street vendors (38.10%) since this job is rather easy as they can build stalls around the ecotourism area or in front of their houses. Furthermore, the profits obtained from this business are also quite large and fast compared to other businesses. Rental business appears as the least business unit established (4.76%) because the availability of equipment is still very limited.

The results of the study showed that some people have shifted their livelihoods and some also started working multiple jobs. Furthermore, starting up business regarding tourism is more profitable than their previous jobs, besides their new jobs can be handled during holidays. In line with (Aryani, *et al.* 2017) that the impact of ecotourism development is very high but only seasonal and the earning obtained from the business fluctuate.

3.3 Direct Economic Impacts

The direct economic impact of marine ecotourism activities on Rupat Island comes from economic activities and business opened up around tourist attractions. The community's businesses supply the needs of visitors while having holidays. The maximum cost incurred by visitors is IDR 2,010,000 while the minimum fee is IDR 65,000 which consist of food cost, accommodation and others.

The direct economic impact of tourism comes from the expenses of business actors on Rupat Island. In general, business owners do not pay rent for they open up their business in their own properties.

Table 2. The Direct Economic Impacts

Type of Business	Number	Average Earning (IDR/Month)	Direct Economic Impact (IDR)
Homestay	4	14,450,000	57,800,000
Street Vendor	8	3,275,000	26,200,000
Coastal Vehicle	1	16,800,000	16,800,000
Canoe and Boat Rent	1	1,000,000	1,000,000
Banana Boat Rent	1	3,000,000	3,000,000
Fish Crisp Product	3	2,350,000	7,050,000
Crossing Service	2	2,500,000	5,000,000
Camping Equipment Rent	1	1,280,000	1,280,000
Total	**21**	**44,655,000**	**118,130,000**

Source: Primary Data Processed (2022)

The highest earning is generated by beach vehicle business, where the minimum tariff that must be paid by visitors is IDR 50,000 per 15 minutes with a total of 7 hours of work per day, with a montly earning of IDR. 16,800,000. Whereas the smallest earning is obtained by boat/canoe rental of IDR 1,000,000 per month. The total value of the direct economic impact is IDR 118.130,000 per month.

3.4 Indirect Economic Impacts

The indirect economic impact can be calculated through the income earned by local workers. The average monthly income of workers is IDR 1,428,571 per month. The highest total income is the crossing services, while the lowest total income is tourist rides rental of IDR 1,000,000 per month.

Table 3. Indirect Economic Impacts

Types	Number	Earning (IDR/Month)	Business Expense (IDR/Month)	Indirect Economic Impacts
Homestay	2	1,000,000	300,000	1,400,000
Coastal Vehicle	1	1,500,000	800,000	700,000
Boat/Cano Rent	1	1,000,000	200,000	800,000
Banana Boat Rent	1	1,000,000	250,000	750,000
Fish Crisp Business	1	1,000,000	200,000	800,000
Crossing Services	1	2,500,000	400,000	2,100,000
Ticketing Officer	1	2,000,000	300,000	1,700,000
Total				**8,250,000**

Source: Primary Data Processed (2022)

3.5 Continuing Economic Impacts

The continuing economic impacts emerge from the expenditure incurred by local workers in the tourist area of Rupat Island. According to Putra, *et al.* (2017), the continuing impact is a change in economic activity seen from household expenditures in regard to the earning that is obtained either directly or indirectly. The types of costs include consumption, daily needs and others that reach IDR 2,400,000 per month.

Table 4. The Continuing Economic Impacts

Types	Number	Earning (IDR/Month)	Business Expense (IDR/Month)	Indirect Economic Impacts
Crossing Service	1	2,500,000	80%	2,000,000
Ticketing Officer	1	2,000,000	20%	400,000
Total				**2,400,000**

Source: Primary Data Processed (2022)

3.6 Multiplier Effect Value

The economic impacts of tourist spending on Rupat Island can be measured based on the multiplier effect value obtained from the cash flow. The Keynesian Income Multiplier analysis obtained a value of 1.03 (Table 5) with Ratio of Income Multiplier Type I of 1.07, indicating that an increase of 1 rupiah will have an impact on the income of local workers by 1.07 rupiah. Meanwhile, the Ratio of Income Multiplier Type II is 1.09, implying that an increase of 1 rupiah gained by business owner will be followed by the increasing direct impact, indirect impact and follow-up as explained by (Saiful, *et al.* 2019) regarding the economic impact of maritime tourism on the Term Biruen Beach in Aceh.

Table 5. Multiplier Effect Value

Multiplier Criteria	Value	Note
Spending at the location	125,629,538	
Direct Impact	118,130,000	
Indirect Impact	8,250,000	
Continuing Impact	2,400,000	
Keynesian Income Multiplier	1.03	The ecotourism activities have significant impacts as shown by the *Keynesian Income Multiplier value* and the Type I and Type II *Ratio Income Multiplier* are greater or equal to one (>1)
Ratio Income Multiplier Tipe I	1.07	
Ratio Income Multiplier Tipe II	1.09	

Source: Primary Data Processed (2022)

This economic impact is slightly lower than other ecotourism activities such as Whale Shark ecotourism in Gorontalo (Wolok, 2016), where the Type II Ratio Income Multiplier reached 1.97. This achievement might be due to the fact that Whale Shark Ecotourism has been operating for long time and it is more advanced that the marine ecotourism on Rupat Island.

Conclusion

Based on the results of the analysis, the Keynesian Income Multiplier value is 1.03, implying that there is an estimated increase of 1.03 IDR in the income of workers and business owners in the marine ecotourism. Whereas, the Ratio Income Multiplier Type I is 1.07 and Type II is 1.09 thereby condluding that the ecotourism area in Rupat Island brings significant economic impacts for the community living in the area.

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References

[1] Aryani, S.W., Sunarti, and Darmawan, A. 2017. Analisis Dampak Pembangunan Pariwisata pada Aspek Ekonomi dan Sosial Budaya Masyarakat (Studi Kasus pada Desa Wisata Bejiharjo, Kecamatan Karangmojo, Kabupaten Gunung Kidul, D.I. Yogyakarta). *Jurnal Administrasi Bisnis*, 49(2): 142-146.

[2] Ernawati, N.M., Sudarmini, N.M., and Sukmawati, N.M.R. 2018. Impacts of Tourism in Ubud Bali Indonesia: A community-based tourism perspective. *Journal of Physics: Conference Series*, 953(1). DOI:https://doi.org/10.1088/1742-6596/953/1/012078.

[3] Eslami, S., *et al.* 2019. Community attachment, tourism impacts, quality of life and residents support for sustainable tourism development. *Journal of Travel and Tourism Marketing*, 36(9): 1061-1079. DOI:https://doi.org/10.1080/10548408.2019.1689224.

[4] Franco, M.C., Ona, M.S., and Lopez, C.C. 2019. Segmentation and motivations in eco-tourism: The case of a coastal national park. *Ocean and Coastal Management*, 178, 104812. DOI:https://doi.org/10.1016/j.ocecoaman.2019.05.014.

[5] Gerungan, A., and Chia, K. W. 2020. Scuba diving operators' perspective of scuba diving tourism business in Nusa Penida, Indonesia. *Journal of Outdoor Recreation and Tourism*, 31, 100328. DOI:https://doi.org/10.1016/j.jort.2020.100328.

[6] Hermawan, H. 2016. Dampak Pengembangan Desa Wisata Nglanggeran Terhadap Ekonomi Masyarakat Lokal. *Jurnal Pariwisata*, 3(2): 105-117.

[7] Lu, X., Yao, S., Fu, G., Lv, X., and Mao, Y. 2019. Dynamic simulation test of a model of ecological system security for a coastal tourist city. *Journal of Destination Marketing & Management*, DOI:https://doi.org/10.1016/j.jdmm.2019.05.004.

[8] Marconi, M., Giglio, V.J., Filho, G.H., and Motta, F.S. 2020. Does quality of scuba diving experience vary according to the context and management regime of marine protected areas? *Ocean and Coastal Management*, 194, 105246. DOI: https://doi.org/10.1016/j.ocecoaman.2020.105246.

[9] Marfai, M.A., Riasasi, W., and Suriadi. 2019. Role of disaster preparedness and climate change mitigation on the assessment of coastal disaster resilience in Brebes. *Proceedings of SPIE - The International Society for Optical Engineering, 11372.* DOI: https://doi.org/10.1117/12.2541609

[10] Naja, D.A., Suprayogi, S., Marfai, M.A., and Mardianto, D. 2021. A Study on the Coastal Network Analysis of Dive Centers and Sustainable Tourism Development in Pemuteran Bali, Indonesia. *GeoJournal of Tourism and Geosites*, 36(2): 603-615. DOI: https://doi.org/10.30892/gtg.362sp107-689.

[11] Putra, A.P., Wijayanti, T., and Prasetyo, J.S. 2017. Analisis Dampak Berganda (Multiplier Effect) Objek Wisata Pantai Watu Dodol Banyuwangi. *Journal of Tourism and Creativity*, 1(2): 141-154.

[12] Rudiany, N. P., and Anugrah, P. T. 2020. Potensi Indonesia-Malaysia-Singapura (IMS-GT) Sebagai Stumblinh Block terhadap Masyarakat Ekonomi ASEAN. *Frequency of International Relations (FETRIAN)*, 2(1): 114–141. DOI: 10.25077/fetrian.2.1.114-141.2020

[13] Saiful, A., Hesti, M., and Muhammad, N. 2019. The Impact of the economic activities of marine tourism in Jangka Beach, Jangka mesjid village of Jangka Bireuen subsidtrict, Indonesia. *Russian Journal of Agricultural and Socio-Economic Sciences*, 91(7).

[14] Sugiyono. 2015. *Metode Penelitian Pendidikan.* Bandung: Alfabeta.

[15] Suprayogi, S. *et al.* 2020. Preliminary River MoIDRhometry Analysis for Rafting Tourism in the Saba River, Bali Islands, Indonesia. *International Journal of Sustainable Development and Planning*, 15(5): 631-638. DOI:https://doi.org/10.18280/ijsdp.150505.

[16] Tatarusanu, M. 2016. Local community involvement in tourism development. *Management Intercultural*, 18(37): 435-440.

[17] Warningsih, T., Kusai, Bathara, L., Deviasari, Manalu, M., and Syahzanani, Z. 2021. Valuasi Ekonomi Wisata Pulau Rupat Kabupaten Bengkalis, Provinsi Riau dengan Metode Travel Cost Method. *Journal of Fisheries and Marine Research*, 5(3): 508-513.

[18] Wolok, E. 2016. Analisis Dampak Ekonomi Wisata Hiu Paus Terhadap Pendapatan Masyarakat Batubarani Gorontalo. *Jurnal Ekonomi Bisnis dan Kewirausahaan (JEBIK)*, 5(2): 136-143.

[19] Yulianda, F., *et al.* 2010. *Pengelolaan Pesisir dan Laut Secara TeIDRadu (Integrated Coastal and Marine Management).* Bogor: Pusdiklat Kehutanan-Departemen Kehutanan Ri, Secem - Korea International Cooperation

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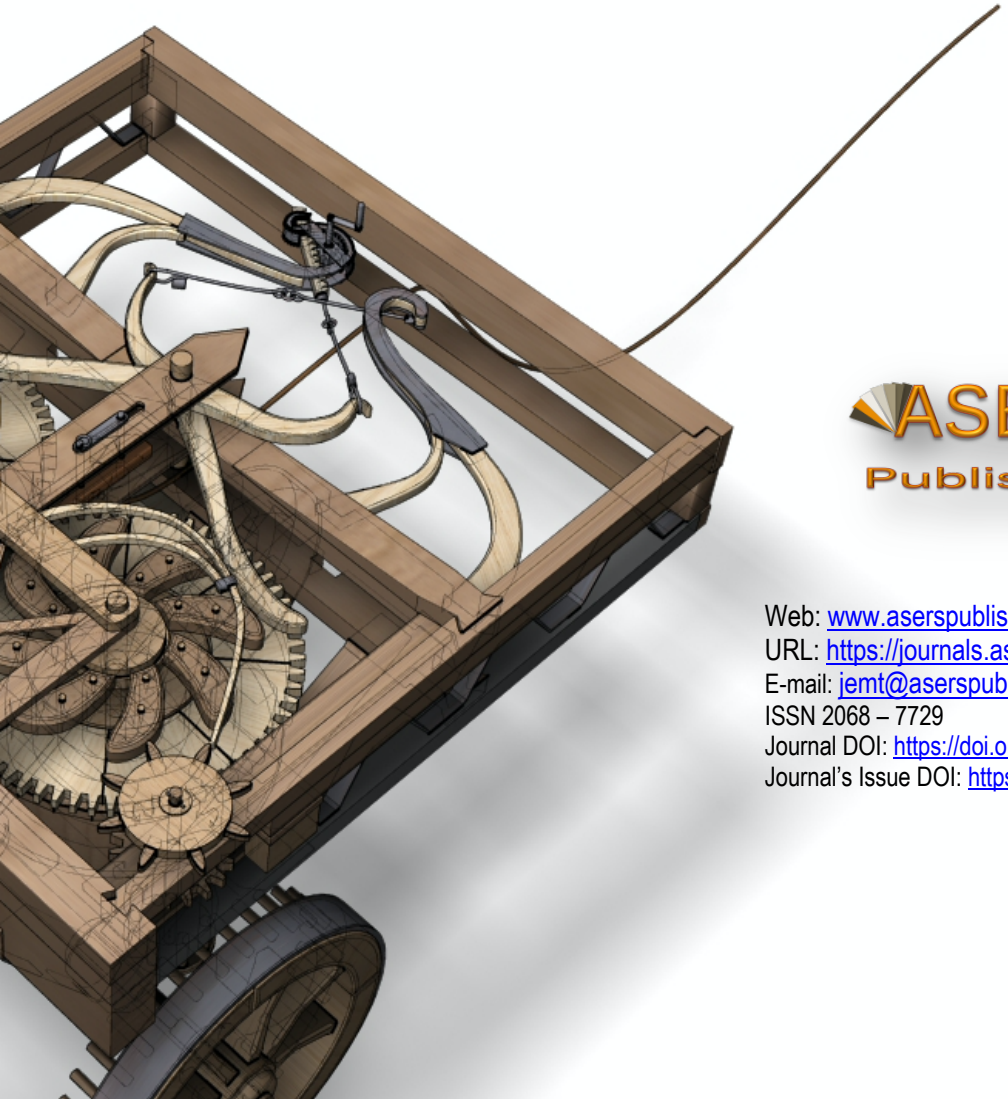

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