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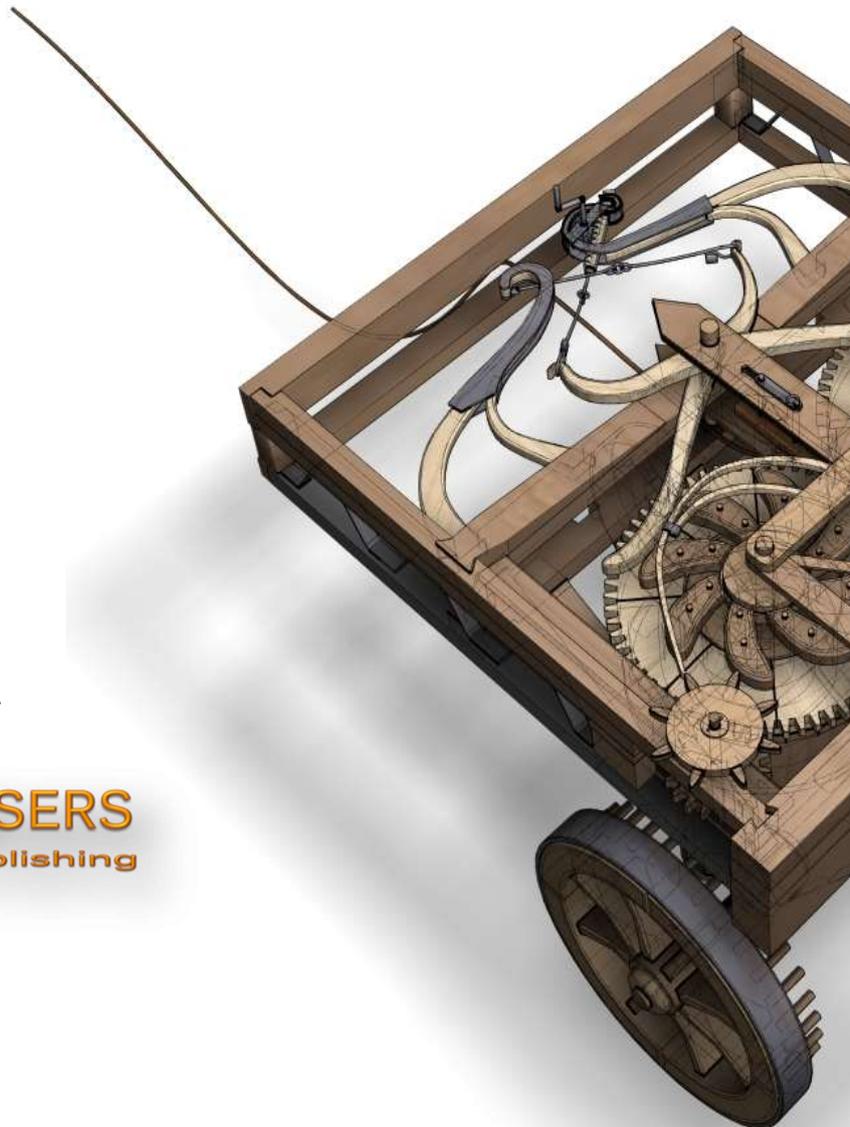
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Developing a Conceptual Model of Employee Ecological Behavior using an Integrative Approach

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Abstract:

In recent years, research on Green Intellectual Capital (IC) has received greater attention in organizational scholarship. This paper develops a conceptual model based on an integrative approach better to understand antecedents and outcomes of Green IC. The proposed model offers future research a holistic understanding of the antecedents and outcomes of Green IC that predict perceived CSR and environmental performance. Moreover, the study revealed a previously unexplored effect of Green IC on perceived CSR. This conceptual paper reviews theoretical approaches and uses intellectual capital-based view theory as underpinning to understand Green IC's antecedents and outcomes. The authors developed a conceptual model with Green Human Resource Management (HRM) and environmental consciousness as antecedents and perceived corporate social responsibility (CSR) and environmental performance as outcomes of Green IC. The authors also suggest that employee ecological behavior (EEB) may be influenced by perceived CSR and increase environmental performance. The study's findings would help an organization create a Green IC by the influential role of Green HRM practices and environmental consciousness. Recognition of the importance of Green IC could enable organizations to create more policies and strategies strengthening their formal CSR, EEB and improve environmental performance.

Keywords: green intellectual capital; green HRM; employee green behavior; perceived CSR; environmental performance.

JEL Classification: M00; Q00; M10; Q01.

Introduction

Over the past few decades, the "going green" concept has gained broad reach (Sheikh 2021). Too much resource use combined with severe environmental contamination and rising demand for going green, sustainable development is unavoidable and necessary (Pan *et al.* 2021). Due to increased pressure from customers, government organizations and societies are now more aware of green practices for mitigating environmental damage and creating a competitive advantage (Ali *et al.* 2021). Researchers have asserted that Green intellectual capital (IC) serves an important function in the search to go green and gain a competitive edge (Chen 2008; Yong *et al.* 2019; Yusliza *et al.* 2020; Sheikh 2021). Dumay and Garanina (2013) advocated expanding the

range of firm value creation to broader society by underscoring the fourth stage of IC research that requires navigating” the knowledge created by countries, cities, and communities and advocates how knowledge can be widely developed thus switching from a managerial to an ecosystem focus” (p. 21). Thus, developing Green IC could boost the likelihood of organizational sustainability. In the literature, IC is defined as intangible resources like the information stock and an organization’s capacity to enhance its value (Masoulas 1998). IC is the sum of all intangible resources (Stewart 1991) that an organization possesses, which have become more essential than tangible resources (Allameh *et al.* 2010).

Green IC is the sum of tangible resources and knowledge related to environmental protection or innovation (Huang and Kung 2011; Chang and Chen 2012). As the first researcher to introduce the Green IC concept, Chen (2008) remarked that this capital could continuously improve an organization’s competitive advantage. Past literature has repeatedly shown the association between Green IC and organizational performance, for example, green innovation adaptation (Ali *et al.* 2021), organizational competitive advantage (Rezaei *et al.* 2016), social innovation (Sheikh 2021), environmental performance and competitive advantage (Sidik *et al.* 2019), environmental product innovation (Delgado-Verde *et al.* 2014), economic and green performance (Wang en Juo 2021), Green human resource management (HRM) (Yong *et al.* 2019) and sustainable performance (Yusliza *et al.* 2020). However, these studies have neglected the role of Green IC with individual-level outcomes, for example, perceived CSR (Liao, Hsu, en Chiang 2021) and its effect on employee ecological behavior (EEB) (Nisar *et al.* 2021). As such, to address this gap, investigating how Green IC plays a role in translating perceived CSR to enhanced EEB is critical.

CSR encompasses the initiatives that a company performs to impact society and contribute positively to social welfare. CSR can produce competitive advantage, sustainable growth, and achieving goals and strategies (Sabokro, Masud, en Kayedian 2021). The main aim of CSR activities is to maximize a company’s positive influences and minimize its negative influences on society (AlSuwaidi, Eid, en Agag 2021). Many successful organizations employ CSR as a crucial strategy that goes beyond the typical financial perspective. A socially responsible approach helps companies increase their performance in both financial and environmental areas (Chang en Chen 2012). CSR research suggests the necessity to concentrate on its micro-foundations to achieve a comprehensive understanding of the concept. Only recently has CSR research shifted its concentration from organizational and institutional level research to individual-level research (Afsar en Umrani 2019). However, the processes explaining how and why CSR motivates employees to engage in organizationally desired behaviors and attitudes are not clearly understood (Tian en Robertson 2017).

Although firm-level Green IC has garnered much research attention, studies do not particularly address the role of Green IC as a framework promoting organizational sustainability (Benevene *et al.* 2021). An organization cannot ignore increasing environmental concerns, even if they articulate sustainable and environmental objectives as high priorities (Yusliza *et al.* 2020). Organizations require a workforce concentrating on environmental issues (Yong *et al.* 2020). New product launches, their associated processes, and sustainable production chain management require employees with appropriate attitudes, behaviors, beliefs and decision-making skills (Delgado-Verde *et al.* 2014). Further, Nisar *et al.* (2021) added that while some managers are gradually making progress in adopting green practices, most are not adopting them. Thus, additional research is needed on the linkage between green practices and their effects on the Green IC of an organization, which is required to increase environmental performance.

Green HRM practices should be viewed as predictors of environmental performance because greening an organization impacts the overall supply chain of which culture, employee behaviors, management, production, strategies, values, and waste management are a few examples (Benevene en Buonomo 2020). The magnitude of exhibiting environmental care would largely depend on employee awareness related to the importance of meeting a green organizational agenda (Bombiak en Marciniuk-Kluska 2018). Hence, the implementation of GHRM practices is crucial in making the employees sensitive to environmental problems. Jirawuttinunt’s (2018) findings revealed that firms could speed up green HRM to improve Green IC for competitive advantage and environmental performance. Moreover, the association between green HRM and Green IC remains in infancy, and more research needs to be conducted (Malik *et al.* 2020). Hence, this current study examines how environmental consciousness and green human resources management practices can increase an organization’s Green IC.

This study seeks to identify the role of green HRM and environmental consciousness for developing the Green IC of organizations. In addition, the role of perceived CSR has been examined for EEB that also leads to environmental performance. An exploration of the relevant literature reveals a dearth of evidence about whether Green IC can be linked to perceived CSR and whether EEB and environmental performance can be formulated

via perceived CSR. Furthermore, to increase the understanding of this particular research issue and fill this important knowledge gap, this paper questions if and how Green IC links with green HRM, environmental consciousness, perceived CSR, EEB, and environmental performance. Against the above backdrop, our paper proposes a conceptual model to explore antecedents and outcomes of Green IC. The following objectives have been set for this conceptual paper based on the literature:

- 1) To find the association between green HRM and environmental consciousness on Green IC.
- 2) To find the association between Green IC and perceived CSR and environmental performance.
- 3) To find the association between perceived CSR and EEB.
- 4) To find the association between EEB and environmental performance.

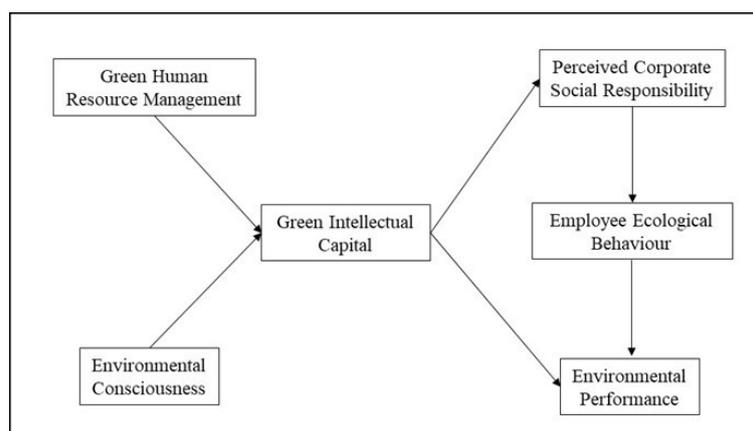
1 Literature Review

1.1 Theoretical Foundation

The current research draws upon the intellectual capital-based view (ICV) theory. Many researchers (Brooking 1996; Edvinsson 1997; Sveiby 1997) have worked on different proposals related to this theory. With roots in the resource-based view theory, the ICV seeks to reveal hidden knowledge-based dynamics related to a firm's value (Sheikh 2021). ICV underscores the significance of a firm's knowledge dynamics (also known as intangible resources) for ensuring superior organizational performance and gaining a competitive advantage (Reed, Lubatkin, en Srinivasun 2006). ICV emphasizes specific aspects (*i.e.*, intangible resources) narrowly linked with a competitive advantage and firm performance. Drawing upon ICV, this research posits that Green HRM furthers the green agenda of firms. It is empirically established that sustainable competitive advantage depends on the competence and performance of the employees (Sidik *et al.* 2019). However, organizational leaders are responsible for creating environmental awareness among the workforce.

An organization would reap the benefits of its IC when it has a conducive environment and strategic focus (Mansoor, Jahan, en Riaz 2021). In a nutshell, environmental performance can be enhanced through a green workforce and with strategic support from the Green IC of the organization. Thus, this investigation explores the possible effect of green HRM and environmental consciousness on Green IC and further enhancement of CSR and environmental performance. Another important factor in long-term environmental performance is the ecological behaviors of employees, and organizations must be effective in improving these behaviors (Saeed *et al.* 2019). Employee willingness to work toward environmental sustainability improves as Green IC enriches a firm's sustainable operations (Yusliza *et al.* 2020). Accordingly, the current paper argues that when an organization hires employees with a green psychology orientation, gives them environment-oriented training, develops them through green HRM practices, this builds the Green IC that leads to better environmental performance. See Figure 1.

Figure 1. A Proposed Conceptual Model of Green Intellectual capital



1.2 Green Intellectual Capital

Green IC is the store of abilities, connections, knowledge, and other intangible resources utilized for environmental protection at the individual or organizational level (Chen 2008). When an individual is hired based on green initiatives, green development and training are provided, and green discipline practices and procedures are followed, these eventually improve environmental management (Nisar *et al.* 2021). Green IC can be divided into three categories: green human capital, green relational capital, and green structural capital (Chen 2008).

Green human capital is employee-based assets like commitment, creativity, knowledge, and skills directed toward environmental protection. Green relational capital is firms' intangible assets based on the associations among companies, creditors, stakeholders, and suppliers to gain competitive advantages. Green structural capital is assets demonstrating environmental concern and green innovation like organizational capabilities, culture, information, knowledge management systems, reward systems, and intellectual property like trademarks.

1.3 Green Human Resource Management

Green HRM refers to “the systematic, planned alignment of typical HRM practices with the organization's environmental goals” (Jabbour 2013, 147–148). Green HRM is significant within organizations, contributing to green marketing, operations, and supply chain management. Nisar *et al.* (2021) argued that HRM practices are primarily focused on profit maximization for internal stakeholders, whereas Green HRM practices focus on external stakeholders. To encourage the use of eco-friendly business practices, Green HRM encourages employees to be committed and focus on both their personal and professional goals. Green HRM is seen as offering a holistic view of the issue and aligns employees with an organization's environmental strategy (Yong *et al.* 2020; Farooq *et al.* 2021). Green-focused activities are challenging to begin because they often require systemic change, and employees must initiate, implement, and accept any change, which are the primary aims of green HRM (Mishra, Sarkar, en Kiranmai 2014).

1.4 Corporate Social Responsibility

CSR offers guidelines on how an organization will attain economic, environmental, and social sustainability. Well-crafted CSR policies will improve overall employee involvement, company structure, and sustainability strategies (Sabokro, Masud, en Kayedian 2021). The effects of CSR provide messages about the pro-environmental attitudes, behaviors, and values that an organization supports and expects; an employee who engages in appropriate green behaviors will receive social approval (He, Morrison, en Zhang 2020). According to Brammer *et al.* (2007), CSR is mostly related to an organization's external image and reputation. CSR encompasses environmental activities, philanthropy, and the community. Through emails, newsletters, seminars, and training, employees become aware of their organization's CSR activities, which is expressed as concern for the environment, society, and other stakeholders. Employees then try to reciprocate by performing extra-role behavior showing concern for the environment (Afsar en Umrani 2019).

1.5 Environmental Consciousness

Per Zelezny and Schultz (2000), environmental consciousness refers to specific psychological factors associated with an individual's propensity to participate in pro-environmental behaviors. Environmental consciousness may be defined as the perceptions of a group, individual, or organization about environmental concepts like environmental management, policy, protection, and environmentalism (Chaudhry *et al.* 2016). However, when it comes to the organizational context, environmental consciousness is more pertinent, and it measures how much of a company's product is good for the environment and reduces environmental harm (Kang en James 2007). According to Kim *et al.* (2019), various pro-environment practices impact an organization's environmental performance.

1.6 Employee Ecological Behavior

Steg and Vlek (2009) define pro-environmental or “ecological” behavior as an individual activity that minimizes harm to or benefits the natural environment. In the context of the workplace, Ones and Dilchert (2012) define the concept as “scalable actions and behaviors that employees engage in that are linked with and contribute to or detract from environmental sustainability”(p. 87). EEB measures the readiness of employees to take specific actions to protect the environment. Bissing-Olson *et al.* (2016) highlighted numerous activities like conserving water, recycling, reusing, saving electricity, riding bikes or walking or utilizing public transportation, disposing of non-recyclable waste properly, using less paper when printing, and purchasing and consuming green products. Such eco-friendly behavior creates value for an organization by boosting its environmental performance (Kim *et al.* 2019). Specifically, Norton *et al.* (2015) distinguished between required behavior contributing to core business goals and voluntary behavior contributing to the organizational, psychological, and social environments providing the context for task performance.

1.7 Propositions development

1.7.1 Green HRM and Green Intellectual Capital

Implementing effective Green HRM practices contributes remarkably to employees' positive outcomes (Saeed *et al.* 2019). Green HRM ensures that employees are committed to and engaged in environmental practices alongside attention to their work to create profits. When participating in Green HRM, companies can project the image of an ethical and responsible organization that shapes positive employee attitudes and skills. According to Jackson *et al.* (2011), green HRM boosts business performance by impacting employee competencies and motivation levels and providing them with occasions to participate in beneficial actions and activities. A recent study found that general GHRM and green training were the best predictors of individual environmental behavior and performance (Saeed *et al.* 2019). Kim *et al.* (2019) revealed that HRM practices significantly impact an individual's eco-friendly behavior in reducing harmful environmental effects. Ma *et al.* (2021) reported that green training provided to employees enhances their abilities, attitudes, commitments, knowledge, and skills towards environmental management. Based on the above discussion, the following proposition can be posited:

Proposition 1: Green HRM has a positive effect on Green IC.

1.7.2 Environmental Consciousness and Green Intellectual Capital

Environmental consciousness triggers organizational and technological change, forcing firms to alter their thinking about business models, processes, products, and technologies (Chang en Chen 2012). Businesses should make environmental considerations central to their operational strategy. Previous studies have found that organizations with an environmental consciousness have improved human, structural, and relationship capital (Ferrell, LeClair, en Ferrell 1997). Those companies that are particularly environmentally conscious would ensure that their employees are aware of their environmental policies, making them more apt to boost their employees' environmental knowledge and innovation. For instance, people may consume organic foods, take part in recycling programs, and buy eco-labeled products due to their improved awareness of environmental problems (Alsmadi 2007). Chang and Chen (2012) found a positive association between environmental consciousness and Green IC. Thus, this current study argues that environmental consciousness is positively associated with Green IC. Based on the above discussion, the following proposition is posited:

Proposition 2: Environmental consciousness has a positive effect on Green IC.

1.7.3 Green Intellectual Capital and CSR

An organization's human capital is a critical resource for innovation because employees' knowledge is critical for sustaining a firm in the face of current rapidly evolving technology (Subramaniam en Youndt 2005). Accordingly, organizations with greater Green IC are likely to have greater motivation for setting and achieving green innovation. Companies should invest more resources and effort into increasing their Green IC to achieve sustainable development goals (Liao, Hsu, en Chiang 2021). A firm with a poor environmental culture and systems could not achieve goals related to sustainability. With environmental knowledge integration at the organizational level, a firm creates a strong supportive culture motivating its employees to gain new environmental knowledge and implement green innovations (Wang en Juo 2021). Prior studies have posited that company ethics programs positively influence employees' perceived CSR (Singhapakdi *et al.* 2019). In addition, (Liao, Hsu, en Chiang 2021) found a positive association between Green IC and perceived CSR. Similarly, this paper argues that a company's Green IC will positively affect employees' perceptions of CSR. Thus, the following proposition is posited:

Proposition 3: Green IC has a positive effect on perceived CSR.

1.7.4 Green Intellectual Capital and Environmental Performance

IC enables a firm to attain economic growth and gain a competitive position by practicing green economic and social activities while contributing to society (Huang *et al.* 2014). Green IC directs employees and stakeholders towards green initiatives, practices, and processes helping to resolve environmental problems and gain organizational goals and objectives (Claver-Cortés *et al.* 2007). Green IC is a critical strategic resource for organizational success because the knowledge and skills of employees are essential for sustaining a firm in today's fast-changing business environment (Yong *et al.* 2019). Researchers have proposed that Green IC could serve a primary role in facilitating a change to green HRM. In this instance, employees would be selected based on the correct criteria, employee skills in environmental management would be developed via training, and appropriate performance assessment and rewards systems contributing to organizational environmental

performance would be created (Mansoor, Jahan and Riaz 2021. Khan *et al.* (2021) argued that Green IC was significantly associated with environmental performance; therefore, the following proposition is posited:

Proposition 4: Green IC has a positive effect on environmental performance.

1.7.5 Perceived CSR and EEB

CSR as a resource conservation policy and ethical framework can create a green context fostering employee green behavior (Su en Swanson 2019). A handful of studies in this area suggest that CSR actions and policies can influence EEBs (De Roeck en Farooq 2018; Raza, Farrukh, en Farhan 2021). An organization highly valuing CSR that makes strong efforts to protect the environment, reduces resource waste and pollution, and cares about customers and the community gains a competitive advantage (Levy en Marans 2012). This focus also encourages employees to protect the environment and conserve resources (Cheema *et al.* 2020). When an employee thinks his/her firm is participating in environmentally friendly programs, the likelihood that an employee will exhibit environmentally friendly behaviors increases. CSR can accentuate advocacy and values that enhance employee identity when they engage in green behavior (He, Morrison, en Zhang 2020). Therefore, the following proposition is posited:

Proposition 5: Perceived CSR has a positive effect on EEB.

1.7.6 Employee Ecological Behavior and Environmental Performance

Employee involvement in addressing environmental challenges and engaging in environmental behaviors is considered a productive strategy as these lead to enhancing an organization's environmental performance (Kim *et al.* 2019). Paillé *et al.* (2014) proved that employee behavior positively impacts an organization's environmental performance. Employees demonstrating appropriate environmental behavior become effective tools as they utilize technological resources in activities like promoting a paperless environment, protecting the environment, and reducing carbon footprints to pursue green goals (Gill, Ahmad, en Kazmi 2021). In short, employee environmental behavior is concerned with concrete actions that individuals take while performing their routine job activities through which they contribute to attaining environmental performance at the organizational level. Therefore, the following proposition is posited:

Proposition 6: EEB has a positive effect on environmental performance.

Conclusion

This conceptual paper focuses on incorporating well-thought green HRM practices and procedures as one ingredient for creating Green IC and overall organizational development. The study develops a conceptual framework that examines the influence of green HRM practices and environmental consciousness on the Green IC of organizations. The study also revealed the link of Green IC with factors rooted in environmental psychology; considering this linkage could be a promising way to provide better insights into corporate greening. The study contributes to the exploration of the relationship of Perceived CSR on EEB, which remains a largely unexplored area. Organizational strategies can modify perceptions of CSR strategies, which can generate stable ecological behavioral patterns in organizations. The role of Green IC in generating a green-led approach in organizations allows for implementing sustainable initiatives through appropriate employee environmental behaviors and contributions.

From a decision-making perspective, this paper has useful implications for organizations concerned with Green IC. First, recognizing the significance of Green IC would empower organizations in developing policies, strategies, and tactics. Policymakers may improve intangible resources by using green HRM practices, which encompasses human, relational, and structural capital to boost organizational capabilities to engage in green practices. Organizations can use green HRM to attain a competitive advantage by raising employee awareness and boosting their knowledge through training. Second, company policymakers should develop measures that the company with the requirements of environmental protection agencies to create a green organization. Third, organizations could strengthen their formal CSR programs and create awareness among employees of green organizational initiatives. This could influence EEB and can help improve environmental performance.

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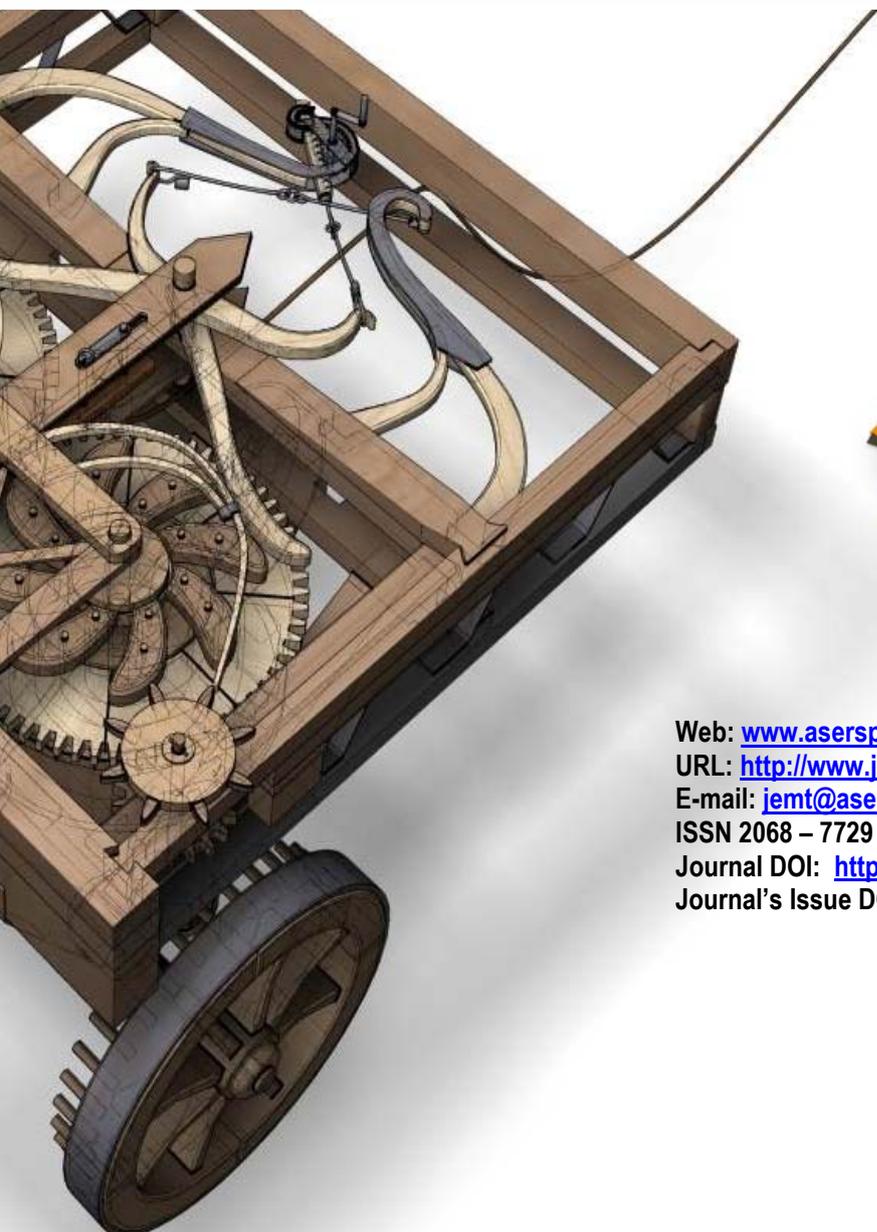
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