

Exploration of Green Ergonomics Utilising the System Dynamics Approach with the Lenses of 5.0

Carol Dineo Diale-Makgetla (PhD)

Senior Lecturer

Department of Industrial Psychology

University of South Africa

Pretoria South Africa

dialecd@unisa.ac.za

Hartmut. von der Ohe (PhD)

Associate Professor

Department of Industrial Psychology

University of South Africa

Pretoria South Africa

vdoheh@unisa.ac.za

Victor Aladesanmi (PhD)

Postdoctoral Fellow

Department of Industrial Psychology

University of South Africa

Pretoria South Africa

aladevi@unisa.ac.za

Abstract

Worldwide, the research agenda is needed to explore green ergonomics, manufacturing, and green building key drivers through system dynamics modelling, contributing to innovation and sustainable living. Previous research looked at green human resources and safety principles with minimal focus on translating green ergonomics principles with the lenses of industry 5.0. The emergence of smart and sustainable manufacturing to feed onto the key drivers of green ergonomics forms part of the current study's focus. The current study uses a system dynamics methodology in conceptually simulating a causal and stocks and flows with a focus on qualitative methodology. The focus is on strategic-level variables, which inform policy formulation. Stocks, flows, dynamic variables and the causal loop simulation are formulated using the Euler mathematical equation. The study formulates a framework on green ergonomics, green manufacturing and green building, inclusive of green and sustainable designs key drivers. The system dynamics approach is in response to adoption and contribution to industry 5.0.

Keywords

Green ergonomics, Industry 5.0, System dynamics, Green buildings, Green manufacturing.

1. Introduction

The current study investigates ergonomics within the green building sector, with a particular focus on how human-centred design can be integrated into sustainability practices. Green building is not an isolated concept; it is closely linked with other thematic areas such as energy, water, waste management, and consumption. For example, sustainable energy in green buildings involves energy efficiency, careful use of water, and recycling technologies, while waste management requires systems for recycling and converting waste into new products. Green buildings also encompass smart manufacturing, sustainable designs, and the use of recyclable materials. Within the broader green economy, ergonomics is often referred to as *ergo ecology*, highlighting its role in aligning human well-being with environmental sustainability. Green ergonomics is therefore relevant across multiple sectors, including sustainable transport, agriculture, technology, tourism, and consumption, in addition to green building and waste management (Diale et al., 2021a; Diale et al., 2021b). While sustainability initiatives in South Africa and globally have gained significant momentum, the human dimension of these initiatives has not received adequate attention. Green technologies and buildings are often designed with environmental performance as the primary goal, yet their success depends on how people interact with them. Ergonomics provides a vital perspective to ensure that green systems are not only environmentally sound but also safe, efficient, and supportive of human well-being. This research is motivated by the need to integrate ergonomics into the green economy so that sustainability efforts are both environmentally and socially sustainable. By doing so, the study contributes to the achievement of national development priorities and international sustainability goals. Although sustainability has become a central focus in the green economy, ergonomics has not been sufficiently integrated into this space. In the manufacturing environment, the key drivers of green ergonomics remain poorly defined, limiting the ability of organisations to design workplaces that are both sustainable and human-centred. Furthermore, the relationships among these drivers are not well understood; it is unclear whether they reinforce or undermine one another when considered within iterative causal loops. This lack of clarity hinders the development of effective strategies for embedding ergonomics into sustainable practices.

In addition, there is limited exploration of how stocks and flows can be formulated using domains of ergonomics within green building thematic areas. Without such systems-based modelling, it is difficult to capture the dynamic interactions between resources, processes, and outcomes that shape the success of green ergonomics. The absence of a structured framework restricts both theoretical advancement and practical application, leaving a gap in the integration of ergonomics into sustainable development initiatives.

1.1 Objectives

- To identify and analyse the key drivers of green ergonomics within the manufacturing environment.
- To examine the relationships among the key drivers of green ergonomics within an iterative causal loop.
- To formulate stocks and flows using domains of ergonomics within green building thematic areas.

2. Literature Review

Ergonomics is derived from two Greek words: *ergon*, meaning “work”, and *nomos*, meaning “laws”, thereby denoting the science of work (Caplet, 2007; International Ergonomics Association, n.d.). Ergonomics, also referred to as human factors, is the scientific discipline concerned with understanding the interactions between humans and other elements of a system. The profession applies theory, principles, data, and methods to design and optimise both human well-being and overall system performance (Caplet, 2007). Traditionally, ergonomics has been viewed as a subfield of industrial and organisational psychology, as well as engineering and the physical sciences. It is primarily concerned with achieving a fit between people and their workstations. The aim of ergonomics is to ensure that tasks, equipment, information, and the environment are designed to suit the needs and capabilities of workers, thereby reducing strain and enhancing efficiency. In recent years, the focus has expanded to include green ergonomics *or* green manufacturing. This approach integrates ergonomic principles into sustainable practices, recognising that human-centred design is essential for the success of environmentally responsible systems. Research has shown that green ergonomics contributes to improved morale, enhanced productivity, and greater employee motivation (Baah Opoku et al., 2021). By aligning human well-being with sustainability goals, green ergonomics strengthens both organisational performance and environmental outcomes.

The domains of ergonomics are cognitive, organisational, and physical, as depicted in Figure 1.



Figure 1. Domains of ergonomics Source: International Ergonomics Association (n.d)

The benefits of ergonomics in the workplace are as follows: It increases productivity and improves work efficiency, output and quality (Amrutha & Geetha 2019). Furthermore, ergonomic principles improve engagement, morale, and overall health, creating an organisational safety culture. They prevent turnover, absenteeism, and lawsuits resulting from injuries or illnesses due to the work environment (Huda & Matondang 2018). The detrimental effects of poor ergonomics are ergonomic stressors, psychological stress, physical/emotional pain and injury. The ergonomic disorders affect employee morale and productivity and add to organisational costs (Huda & Matondang 2018). When translating the above onto green ergonomics, previous research looked at green human resource safety principles as suggested by (Amrutha & Geetha 2019; Huda & Matondang 2018; Poon et al., 2016; Sarker et al., 2018; Sharan 2019; Thatcher and Milner 2014), with minimal focus on the complete translation of green ergonomics principles. Therefore, in the current study, green ergonomics is simulated as part of the causal loop and stocks and flows as described in methods and results section in the current study.

2.1. Green Ergonomics Through Green Buildings

The green economy is one of the mechanisms to remedy environmental challenges (Nhamo & Mjimba 2020; Nhamo & Mukonza 2020). It includes eight thematic areas, which are inclusive of sustainable energy, sustainable water, waste management, agriculture, green buildings, sustainable transport (mini car/cycles), responsible consumption, as well as resource conservation and management (Diale et al., 2021b; UNEP 2018). A green economy is considered to be a solution to curb carbon emissions, reduce pollution, carefully use water resources, regulate elevated energy use, ensure resource efficiency, and maintain ecosystem services, including the biodiversity that addresses the economy through employment (Greent Project, n.d; Nhamo 2013; UNEP 2018).

Green buildings consist of green design and ergonomic products, which is impacted by green production (Al-Alwan & Saleh 2020; Ametepey et al., 2015; Hanson 2013). What makes a green building "green" or eco-friendly is the availability of sustainable energy, water management, and recycling technologies, as well as products ensuring sustainability.

2.2. Industry 5.0

Industry 5.0 builds upon the foundations of Industry 4.0, extending its scope to emphasise human-centred and business process integration (Xu et al., 2021). Within this paradigm, the wellness of individuals operating machines is critical, alongside the adoption of green behaviours that support sustainability.

The current study contributes by simulating the causal loop of well-being as influenced by green buildings, green organisations, enhanced wellness, and sustainable production. Through system dynamics modelling, the study demonstrates the capability to represent virtual behaviours, conduct simulations, and generate projections that evaluate multiple solutions simultaneously. This dynamic modelling capacity enriches the existing theoretical framework by offering a holistic view of interconnected sustainability drivers.

The innovation dimension is captured through causal loop diagrams and stocks-and-flows modelling, which highlight iterative relationships among variables. These tools illustrate how green ergonomics and sustainable practices reinforce one another, ultimately leading to improved organisational outcomes.

By integrating system dynamics, the study not only advances theoretical understanding but also provides a methodological foundation for examining complex sustainability challenges in Industry 5.0.

3. Methods

System dynamics method was used to conduct the current study. The system dynamics methodology can be looked at qualitative or quantitative or mixed method approach. The research methodology approach followed in the current study is a qualitative approach focusing on conceptualisation of the model formulation. The Euler principle in the form of equations was used to support the model conceptualisation in formulating the causal loop as well as stocks and flows to ensure eco-friendly manufacturing.

The system dynamics approach coined by J.W Forrester is a simulation modelling using methodological and computer-based simulation to design and simulate a system's behaviour to understand the social, economic, environmental, and organisational structures (Forrester 2009; Sterman 2001;2018). The system dynamics is underpinned by the theories of organisational studies, history and engineering, contributing to theoretical and empirical studies of solving complex challenges. The system dynamics is heavily premised on the simulation and gamification of mental scenarios and theories (Forrester 2018). System dynamics modelling encompasses stocks, levels, flows, rate, delays, connectors, feedback causal loops, boundaries or parameters, and polarities (Forrester, 2009; Nabavi et al., 2017).

The elements of a system dynamics are as follows:

3.1. Stocks and Levels

Stocks are accumulated over time and can be identified by a box in a system dynamic modelling software. For instance, take money in a bank scenario; a bank is a stock. The levels are denoted with a box similar to a stock (Forrester 2009; 2018; Meadows 1977; Sterman 2001)

3.2. Flows

A flow acts as an accelerator facilitating a change in a given scenario (Forrester 2009;2018; Sterman 2001). Flows are further characterised by inflow and outflow. Sterman (2001) makes an example of inflow characterised by births or water running to a sink at a specific rate, while outflow can be characterised by deaths or water going through a drain see Figure 2. An example of a flow can also be a growth or loss of money influenced by how the economy is performing.

3.3. Boundaries

Boundaries denote how far a system can go, influenced by capability, environment or the criteria set by the researchers. Setting boundaries comes with challenges and is usually underpinned by personal judgment (Nabavi et al.,2017). However, at the same time, this serves as an advantage as the researchers experiences some flexibility. Parameters illustrate the boundaries in the current study.

3.4. Connectors, Polarities, Feedback Causal Loops and Dynamic variables

The connectors are arrows showing a direction or movement from one variable to the other. Other system dynamics models make use of the word links. Links or connectors can be seen in Figure 3. Polarities are signs such as - or +, opposite [o], and same [s] used in a causal loop. A causal loop is an iterative cycle to determine why there is adoption or lack of adoption (Sterman, 2001). The + means that if variable A increases, variable B increases; the - sign denotes that if the other variable decreases, the opposite is true for the second variable. The causal loop can either reinforce or balance. The feedback loop reinforces if a system is favourable with positive effect or balances if it has a negative relationship in its loop (Forrester, 2009, 2018; Sterman, 2018; Teplov et al., 2016). The feedback causal loops are based on the dynamic variables.

There are steps to be followed when formulating a system dynamic modelling as explained on step 1-5 below. The steps were adapted from (Gokhan et al., 2019):

Step 1: Identifying a problem.

The problem is identified as follows in the current study: The emergence of smart and sustainable manufacturing to feed onto green ergonomics principles to ensure wellbeing, green products and designs requires a research agenda.

Step 2: Identifying the dynamic hypotheses.

The dynamic hypotheses of the study are as follows:

- Key drivers of green ergonomics within the manufacturing environment are sustainable designs (which consist of green roofs, energy-efficient windows, and air quality). Other key drivers of the study are waste management, sustainable energy and technologies, wellbeing, and adoption of green behaviour.
- Key drivers of green ergonomics have a positive or negative relationship in an iterative causal loop.
- Stocks and flows can be formulated using domains of ergonomics through wellbeing, through ergonomics products, green manufacturing supporting the green building thematic area.

Step 3. Create mental models, as well as model formulations.

The mental model and its formulation were developed using causal loop diagrams to determine how the system interacts. In this study, the system is conceptualised as a combination of both scientific and social subsystems, reflecting the interplay between technological innovation and human-centred sustainability practices.

Figure 3 illustrates the causal loop, incorporating stocks and flows, which represent the accumulation and movement of resources, behaviours, and outcomes within the system. This depiction highlights the dynamic relationships among variables and provides a structured framework for simulating the impacts of green ergonomics and sustainable practices.

Step 4. Data Collection

Data for the study was collected through industry reports and secondary sources. A qualitative methodology was employed to extract themes and trends, focusing on the evolving practices and challenges within the green building sector. Boundaries were established to define the scope of analysis, ensuring that the study concentrated on sustainability frameworks, energy efficiency, and environmental impact rather than broader construction industry practices.

To strengthen the analytical framework, system dynamics was applied to model the interactions between different variables in green building adoption. This approach allowed the study to capture feedback loops, delays, and non-linear relationships, providing a holistic view of how policies, technologies, and market forces influence sustainable construction outcomes.

Additionally, Euler's method was utilised as a numerical technique to approximate solutions within dynamic systems. By applying Euler's iterative calculations, the study was able to simulate changes over time, such as the rate of energy savings or carbon reduction, under different boundary conditions. This provided a structured way to forecast potential outcomes and assess the long-term impact of green building strategies.

Step 5. Units of Analysis

The unit of analysis explain how the researchers analysed the data (Creswell & Creswell 2018). The system dynamics equations use mathematical models and qualitative data to develop causal models as well as stocks and flows to analyse the data in the current study. The current study utilised Vensim for causal loop and the integrated modelling consisting of dynamic variables, stocks and flows, and parameters. The preface of Vensim is depicted in Figure 2. The researchers chose Vensim Modelling as it allows for various projections, stocks, flows, and mathematical equations.

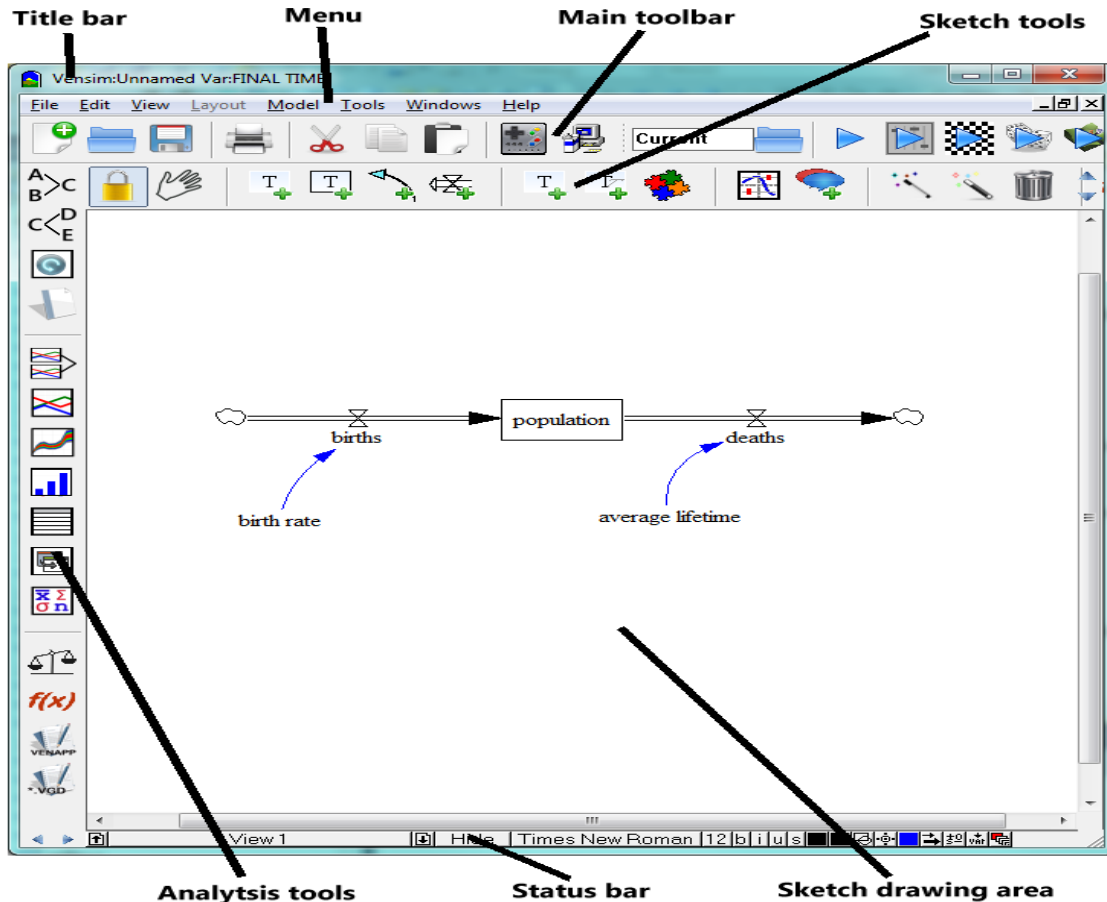


Figure 2. Preface of Vensim: system dynamics icons Source (Vensim n.d)

5. Results and Discussion

The study results are simulated through the causal loop and stocks and flow as per Figure 3 in exploring the conceptual framework of green ergonomics. The use of the causal loop and stocks and flows serves as a contribution

to Industry 5.0 through innovation lenses and green economy. The contribution of the study is further explored in section 5.

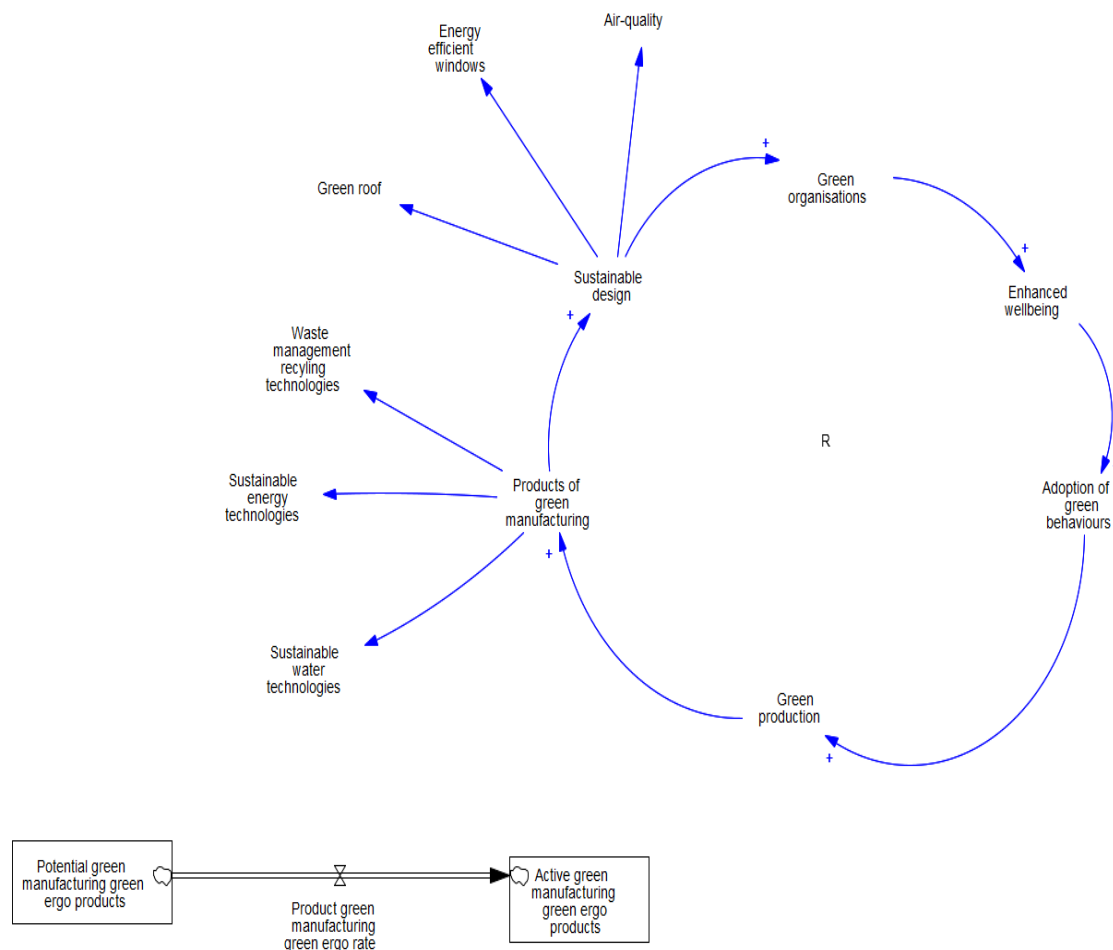


Figure 3. Integrated green ergonomics and manufacturing system dynamics modelling.

Figure 3 can be interpreted as follows: If sustainable design increases through the installation of green roofs, waste management, sustainable water and technologies, then green organisations will increase, which would, in turn, increase the wellbeing of staff members, especially in the manufacturing environment, and employees would start adopting green behaviour of preserving natural resources which would lead to increased productivity and products. The R inside the casual loop indicates the relationship of variables, and they are reinforcing one another, meaning the relationship is positive. Furthermore, the stocks and flows are depicted in Figure 3, and the simulation of the causal loop of the green product is simulated using the Euler equation. The Euler equation is based on differentiation theory and provides a solid basis for the simulation and modelling of the stocks and flow diagram. The equation used in the system dynamics modelling applies the symbol “/” to denote division and the symbol “*” to denote multiplication. The conceptual equation fed onto the stocks and flow diagram in Figure 3 is as follows:

$$\text{Potential green manufacturing and green ergonomics products} / \text{Potential green manufacturing and green ergonomics product rate} * \text{Active manufacturing green ergonomics products} \quad (\text{Eq.1})$$

The behavioural and observation patterns yield as follows: as potential green manufacturing increases, active green manufacturing increases. There are minimal or low manufacturing organisations focusing on sustainability or green

products in South Africa. There are 20 manufacturing organisations with eco-friendly and sustainable designs. The air quality requires a criterion of monitoring bad and good air quality, which still need to be implemented in South Africa inclusive of the energy-efficient windows. The latter solution can be premised within the best practices adopted by other countries. However, on the positive side, South Africa has gained momentum in the adoption of green roofs and solar.

6. Contributions

6.1 Contribution through Green Ergonomics and Wellbeing

The emergence of smart and sustainable manufacturing, which feeds into the principles of green ergonomics, represents a key contribution of the current study. Industrial and Organisational Psychologists (IOPs) can play a vital role in managing and monitoring processes from the human perspective, thereby ensuring wellbeing, productivity, team morale, and cohesion within green manufacturing environments.

Green ergonomics can be integrated across various sectors, including green buildings, sustainable livelihoods, and furniture manufacturing using recycled materials. It is intricately linked to the principles of green building and could potentially be incorporated into a single bylaw framework. A green building is typically characterised as one designed with environmentally friendly materials and sustainable resources.

Indicators of green building such as energy efficiency, indoor environmental quality, sustainable site planning and management, materials and resources, and water efficiency (Abdel-Basset et al., 2021) can be effectively managed through the lens of green ergonomics. This integration enhances production, employee performance, and overall wellbeing, thereby reinforcing the value of ergonomics in sustainable development.

6.2 Contribution through System Dynamics to Industry 5.0

The application of system dynamics represents a significant innovation contributing to the advancement of Industry 5.0. Within this framework, the green economy supports human wellbeing, encourages the adoption of green behaviours, and protects the environment through the principles of green ergonomics.

System dynamics offers the ability to address multiple challenges simultaneously, providing both technical and soft solutions. These include improvements in wellbeing and productivity, achieved through causal loop modelling, Euler-based mathematical equations, and stocks-and-flows simulations. This methodological capability strengthens the theoretical foundation of Industry 5.0 by demonstrating how sustainability, ergonomics, and innovation can be dynamically interconnected.

7. Conclusion

The study conceptualised and examined the key drivers of green ergonomics through system dynamics modelling, framed within the context of Industry 5.0. This exploration emphasized innovation, well-being, the green economy, and environmental protection through sustainability practices. The innovation dimension was analysed using causal loop diagrams and stocks-and-flows modelling and simulation, which allowed the study to capture dynamic interactions and feedback mechanisms.

In addressing the research questions, the study identified the following key drivers of green ergonomics:

- Sustainable design (e.g., energy-efficient windows),
- Indoor air quality,
- Green roofing,
- Waste management and recycling tools,
- Sustainable energy technologies, and
- Sustainable water technologies.

These drivers contribute to the development of a green organisation, which in turn enhances employee well-being, fosters the adoption of green behaviours, and boosts sustainable production. The iterative relationships among these drivers are represented in a causal loop diagram (Figure 3), demonstrating their positive reinforcement effects. Stocks and flows were formulated across the domains of ergonomics, green manufacturing, and the green economy, providing a structured simulation framework.

The conceptualised equation underpinning the study is expressed as:

Potential green manufacturing and green ergonomics products/Potential green manufacturing and green ergonomics product rate*Active manufacturing green ergonomics products.

This equation reflects the dynamic relationship between potential innovations and active implementation within green ergonomics manufacturing.

The modelling and simulation process followed a structured methodology, explained in detail in the methods section (Steps 1–5). The current study represents one of the first attempts to investigate this phenomenon using a system dynamics approach, thereby contributing novel insights. To strengthen the foundation of the research, the authors drew upon some of their previous work, which was appropriately cited, given the limited availability of prior studies in this domain.

References

- Abdel-Basset, M., Gamal, A., Chakraborty, R.K., Ryan, M. and El-Saber, N., A comprehensive framework for evaluating sustainable green building indicators under an uncertain environment. *Sustainability*, 13(11), p.6243. 2021.
- Al-Alwan, H., and Saleh, E. ,Similarities and differences between green, sustainable and healthy building concepts. In *Proceedings of the 1st International Multi-Disciplinary Conference Theme: Sustainable Development and Smart Planning, IMDC-SDSP 2020, Cyberspace, 28-30 June 2020*.
- Ametepey, O., Aigbavboa, C., and Ansah, K., Barriers to successful implementation of sustainable construction in the Ghanaian construction industry. *Procedia Manufacturing*, 3, 1682-1689. 2015
- Amrutha, V.N. and Geetha, S.N., A systematic review on green human resource management: Implications for social sustainability. *Journal of Cleaner Production*, 247, p.119131. 2020.
- Baah, C., Opoku-Agyeman, D., Acquah, I. S. K., Agyabeng-Mensah, Y., Afum, E., Faibil, D., and Abdoulaye, F. A. M., Examining the correlations between stakeholder pressures, green production practices, firm reputation, environmental and financial performance: evidence from manufacturing SMEs. *Sustainable Production and Consumption*, vol 27, pp 100-114. 2021
- Diale, C.D., Kanakana-Katumba, M.G. and Maladzhi, R.W., Environmental entrepreneurship as an innovation catalyst for social change: A systematic review as a basis for future research. *Advances in Science, Technology and Engineering Systems*, vol 6 no 1, pp.393. 2021a.
- Diale, C.D., Kanakana-Katumba, M.G. and Maladzhi, R.W.Ecosystem of Renewable Energy Enterprises for Sustainable Development: A Systematic Review. *Advances in Science, Technology and Engineering Systems* vol 6 no 1 pp 401-408. ., 2021b
- Forrester, J. W, Some basic concepts in system dynamics. *Sloan School of Management*, 1-17. 2009. Forrester, J. W, From the ranch to system dynamics. In *Management Laureates* (pp. 335-370). Routledge. 2018
- Gokhan, M and Yücel, Muhteşem & Ayvaz, Berk, Causal Loop Analysis and improvement areas of AS 9100 aerospace quality management system implementations in Turkish aerospace and defence industry supply chain. *International Journal of Supply Chain Management* vol. 8 No. 3, pp 685. 2019
- Hanson, M. A, Green ergonomics: challenges and opportunities. *Ergonomics*, vol 56, No 3, pp399-408. 2013
- Huda, L.N. and Matondang, R., , February. The lean ergonomics in green design of crude palm oil plant. In *IOP Conference Series: Materials Science and Engineering* (Vol. 309, No. 1, p. 012109). 2018. IOP Publishing.
- International Ergonomics Association (nd) Retrieved from <https://iea.cc/whats/index.html>
- Meadows, D. , H., The unavoidable apriori: a discussion of major modelling paradigms. *The System Dynamics Method, Oslo*, pp 161-240. 1977
- Nabavi, E., Daniell, K. A., and Najafi, H, Boundary matters: the potential of system dynamics to support sustainability? *Journal of Cleaner Production*, vol 140, pp 312-323. 2017
- Poon, W.C., Herath, G., Sarker, A., Masuda, T. and Kada, R.,. River and fish pollution in Malaysia: A green ergonomics perspective. *Applied ergonomics*, 57, pp.80-93. 2016
- Sarker, A., Poon, W.C. and Herath, G., Natural resource use, institutions, and green ergonomics. *Ergonomics and Human Factors for a Sustainable Future: Current Research and Future Possibilities*, pp.271-297. 2018.
- Sharan, DHow Green is Ergonomics in India. In *Proceedings of the 20th Congress of the International Ergonomics Association (IEA 2018) Volume VIII: Ergonomics and Human Factors in Manufacturing, Agriculture, Building and Construction, Sustainable Development and Mining 20* (pp. 1009-1010). Springer International Publishing. ., 2019.
- Sterman, J. Business Dynamics. , Systems thinking and modelling for a Complex World. 2000. *Irwin Professional*.

- Sterman, J. D., System dynamics modelling: tools for learning in a complex world. *California Management Review*, vol 43, No4, pp 8-25. 2001
- Thatcher, A. and Milner, K., Work in a green building has changed productivity, psychological well-being, and physical well-being. *Work*, vol 49 no 3, pp.381-393. 2014.
- Teplov, R., Vääätänen, J., and Podmetina, D., system dynamic approach to modelling the endogenous and exogenous determinants of the entrepreneurship process. *Journal of Innovation Management*, vol 4, no 2, pp 68-95. 2016. doi.org/10.24840/2183-0606_004.002_0005
- Xu, X., Lu, Y., Vogel-Heuser, B., and Wang, L., Industry 4.0 and Industry 5.0 Inception, conception and perception. *Journal of Manufacturing Systems*, vol 61 pp 530-535. 2021. doi.org/10.1016/j.jmsy.2021.10.006

Biographies

Dr Carol Dineo Diale-Makgetla is a registered Industrial Psychologist with the Health Professions Council of South Africa (HPCSA) and a Senior Lecturer in the Department of Industrial and Organisational Psychology at the University of South Africa (UNISA). Prior to joining UNISA, she gained extensive experience across the private sector, government, higher education institutions, and non-governmental organisations. Her research interests include green entrepreneurship, general entrepreneurship, women entrepreneurship, Black African studies, the green economy, environmental psychology, the Fourth and Fifth Industrial Revolutions (4IR and 5IR), artificial intelligence, system dynamics, organisational development, organisational behaviour, leadership, personnel psychology, human resource psychology, diversity management, transformation, Ubuntu/Botho in academic contexts, strategic human resource management, employee and organisational wellbeing, assessments, career counselling and guidance, renewable energy, and ergonomics. Her academic engagement includes international participation in Erasmus staff exchange programmes and presentations at conferences such as the African IEOM, IEEE, SIOPSA, SAIIE conference. Within the university, she plays an active role in, teaching and learning, mentoring emerging scholars and professionals, and serving as an external examiner and moderator across undergraduate and postgraduate programmes. Dr Diale-Makgetla remains committed to research that bridges psychological principles with practical organisational and societal outcomes, particularly within sustainability, entrepreneurship, and human behaviour in workplace contexts.

Prof. Hartmut von der Ohe is an Associate Professor in the Department of Industrial and Organisational Psychology at the University of South Africa (UNISA). He holds a DCom in Industrial and Organisational Psychology from UNISA and is an established researcher and supervisor at master's and doctoral level. His teaching focus is primarily on Personnel Psychology, while his research is grounded in organisational psychology with a strong applied orientation relevant to the Global South, particularly the South African context.

Dr Victor Ifetayo Aladesanmi is an interdisciplinary scholar currently with the Department of Industrial and Organisational Psychology at the University of South Africa (UNISA), where his work integrates data science, advanced manufacturing, and organisational research. He holds a PhD in Mechanical Engineering from the University of Johannesburg (2022) and is currently a post-doctoral fellow in the department of Industrial and Organisational Psychology at Unisa.