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Green Intellectual Capital and its relation to Green Knowledge Management, Green Entrepreneurial Self Efficacy, and Green Behavior among Intern Nursing Students

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Abstract: Climate change and era's challenges are having an increasing impact on the health sector. This highlights the value of green intellectual capital as the cornerstone of sustainable development. Consequently, nurses tolerate green behavior, green entrepreneurial self-efficacy, and green knowledge management for managing this impact. **Purpose**: To assess green intellectual capital and its relation to green knowledge management, green entrepreneurial self-efficacy, and green behavior among intern nursing students. **Methods**: A descriptive correlational design was utilized. Simple random sample of intern nursing students from Menoufia University. Four instruments were used: Green intellectual capital questionnaire, green knowledge management questionnaire, green entrepreneurial self-efficacy scale, employee green behavior scale. **Results**: It showed that near two thirds of studied sample (65.5%) had moderate level of green intellectual capital. Also, it clarified that the majority of the studied sample (86.6%) had moderate level of green knowledge management. Moreover, it presented that the majority of the studied sample (78.5) had moderate level of green entrepreneurial self-efficacy and (52.2%) of them had high level of green behavior. **Conclusion**: There was a high positive relation between intern nursing students' green intellectual capital, green knowledge management, green entrepreneurial self-efficacy, and green behavior. **Recommendations**: Continuous updating of hospitals administrations' understanding of green intellectual capital through workshops and initiatives. Fostering awareness among hospital and nursing executives to fully support their intern nursing students to trainee via environmental protection. Promote evidence-based research concerning sustainable development and intern nursing students.

Key words*: Green behavior, Green entrepreneurial self-efficacy, Green Intellectual Capital, Green knowledge management, and Intern Nursing Students.*

Introduction

Health care organizations ought to be innovative in their ideas and services to adjust to changes. By offering an opportunity to leverage an organization's technological resources and networking skills and capacities, green intellectual capital (GIC) is regarded as a feasible strategy to address environmental issues in order to achieve sustainability and raise the cost of green services while promoting information sharing between the organization and its stakeholders. (Bamel et al., 2022; Shehzad et al., 2023).

GIC enhances health care organizational success, which helps to boost productivity, fosters organization image as well as enables organizations to satisfy patients' health care needs, increases organizational personnel' commitment and decreases turnover intention. In addition, green intellectual capital creates value for the organization, meets environmental regulations and improves sustainability of overall health care organizations (Liao et al., 2021; Zaki, et al, 2023).

GIC is divided into green human capital, green structural capital, and green relational capital (Quynh, et al. 2022). Green human capital is the presence of human resources who have Knowledge, skills, experience, creativity, commitments, and leadership abilities through investments in training programs to improve organizational innovation and handle health care organization matters (Sadiq et al. 2023).

Green structural capital is concerned with all health care organizational capabilities, reward systems, databases, information technology systems, strategies, processes, philosophical frameworks, cultures, rules, procedures, and policies that support decision-making and brings green innovation to health care organization (Tan et al. 2021; Alfatis & Nassani, 2023).

Green relational capital is refers to ability of the organization to build green relations based on the trust with various stakeholders, external agents and the relations having eco-friendly value to the organization based on the knowledge, processes, capabilities, and specific systems, that improve operations of health care organizations (Asiaei et al., and Zhao et al, 2022).

Similar, it is essential to create and develop new sustainability-centered health care services and performing functional processes that imply Green knowledge management (GKM) (Sahoo, et al, 2023). Including knowledge management in health care organizations' operation recognized as significant to develop and generate new strategies and health care services and operational procedures (Rajiani and Normuslim, 2023; Widyanti. et al, 2024).

GKM facilitates the diffusion of green technologies and fostering a culture of sustainability within the organization that may be complex and require specialized expertise achieved through motivates organizational personnel to actively seek out and implement

innovative solutions that drive green innovation within the organization (Sapiai et al., 2025).

GKM is a system composed of green knowledge acquisition, green knowledge storage, green knowledge sharing, green knowledge application, and green knowledge creation. Acquisition refers to the process through which a health care organization acquires, extracts, and organizes knowledge (Mohamad et al., 2020 and Yu et al., 2022).).

While learning through the development or acquisition of knowledge, organizations must set up an efficient mechanism for storing knowledge. In order to enable creative methods, green knowledge sharing entails sharing and exchanging environmentally conscious information among multiple stakeholders, including suppliers, rivals, coworkers, and others. (Serenko, 2022).

With view to knowledge application, it allows organizational individuals to put their knowledge, innovative ideas, procedures, and technologies into practice. Lastly, knowledge creation refers to the process of producing new concepts that are specifically related to the organizational environment by combining explicit and tacit knowledge inside a person, group, or organization (Abbas and Khan, Huang et al, 2022, and Chin et al., 2022)).

Based on various literatures, in order to achieve organizations' environmental goals, especially in green entrepreneurship and sustainable practices, they need Green entrepreneurial self-efficacy (GSE). As it reflects the belief in one's capacity to plan and implement actions that help to address environmental challenges (Chen and Hsieh, 2023; Herlina, et al, 2025).

GSE pertains to the cognitive dimension of learning, particularly the belief in one's own capacity to successfully perform challenging activities that have an effective influence on the health care organizations' environment or pursue a particular career (Yang et al., 2023; Rehman et al, 2025). GSE, as used in a green context, refers to organizational personnel’s convictions and self-assurance that they can have a positive influence on environmental quality and supports long-term sustainable performance and pro environmental behavior that result in the development of green creativity, green performance (Farooq et al., and Mughal et al., 2022 & Ahuja et al., 2023).

With regard to green behavior GB, it is a key to the effective implementation of green practices in the health care organizations that involving employees in green practices. GB encompasses both extra-role (voluntary) and in-role green conduct. Green formal tasks that are a crucial component of an employee performance evaluation are known as "in-role green conduct." Extra-role green behavior refers to voluntary green actions that beyond an employee's formal responsibilities and are not taken into account when evaluating their performance. (Gilal et al, 2019; Aboramadan, 2022).

Individual antecedents of GB includes the following attitudes, beliefs, and

intentions; knowledge, skills, and abilities; personality characteristics and affective and motivational states. On the other hand, contextual antecedents includes work context, leadership, coworkers and team characteristics, organizational factors, and societal context and culture (Katz et al. 2022 and Zacher et al, 2023).

Promoting nurses concerning sustainable nursing practices and how they relate to an eco-friendly environment may inspire them to act in a more environmentally conscious manner (Othman et al., 2025).Occasionally, Green intellectual capital is seen as an essential component that merges innovation with sustainability, as it aids in constructing a robust reputation for organizations by creating products and services that demonstrate enhanced environmental and social standards (Alsalami, & Amanah, 2024).

Significance of the Study

It is necessary for the idea of the Green Hospital as the health sectors are increasingly being affected by climate change and various challenges. So, sustainable development via green behavior, green entrepreneurial self-efficacy, and green knowledge management should be tolerated among nurses (Abdelwahed et al. 2025, ValléeAL, 2024).

Recently, attaining sustainable development depends on green intellectual capital GIC, which is widely regarded as the cornerstone of future rapid economic growth and green performance (Khan et al., 2023 and Zaki, 2023). Similar, Atalla et al. (2024) highlights the value of GIC in nursing field which improve organization superiority. In another line, internship is vital as it provides nursing students' first exposure to the real world and aids in developing their professional experience and skills (Ahmed, and Abdel-Azeem, 2022). However, it is found that there are currently few studies done regarding GIC and its effects on intern nursing students. Hence, it is necessary to refresh this research gap by conducting this study.

Purpose of the study

To assess green intellectual capital and its relation to green knowledge management, green entrepreneurial self-efficacy, and green behavior among intern nursing students.

Research Questions

1) What are the levels of green intellectual capital among intern nursing students?
2) What are the levels of green knowledge management, green entrepreneurial self-efficacy, and green behavior among intern nursing students?
3) What is the green intellectual capital's relation with green knowledge management, green entrepreneurial self-efficacy, and green behavior among intern nursing students?

Method:

Study Design:

A descriptive-correlational research design was used in this study.

Study Setting:

This study was carried out at Menoufia University hospitals that intern students trained.

Sampling

Simple random sample technique was used in the study. The total number of intern nursing students was eight hundred and twenty-five who enrolled at internship year at Faculty of Nursing, Menoufia University. The total sample size in the study according to sample formula was 269 and exceeding to 270 intern nursing students. Sample size was determined by using the following formula of Yamane, Y. (1967) n=N/ 1+N (e) 2. Where (N) = total number of nurses, n = sample size, e = error tolerance (0.05), and 1= a Constant value

Data Collection Instruments:

Instrument one: Green Intellectual Capital questionnaire

It included two parts, the first part included personal characteristics (experience of previous working in hospitals, sex, and trained unit). The second part was adopted by Chen (2008) from Bontis (1999) and Johnson (1999) which contained nineteen items to identify three dimensions of green intellectual capital: five items that relate to green human capital, nine items that relate to green structural capital, and, and five items that relate to green relational capital.

Scoring system:

The scale uses nineteen items, each was five points Liker scale (1 –5) as 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree). The total score was categorized into Low level if perceived (19-44), moderate (45 –70), and high (71 – 95).

Instrument two: Green knowledge management questionnaire.

It was measured using a five-item scale developed by Khan et al. (2023) that was adapted from Mao et al. (2016) and Sahoo et al. (2022).

Scoring system:

Scoring system for each item was 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree). The total score was categorized into low green knowledge management if achieved (5 -12), moderate level was considered when achieved (13 – 20), and high level (21 – 25).

Instrument three: Green entrepreneurial self-efficacy scale.

The scale was designed by Hockerts (2017) and was adapted by Wang et al. (2021).

Scoring **system:**

Scoring system for each item: was 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree). The total score was categorized into low level if had (3 - 7), moderate level (8 – 12) and high level (13 – 15).

Instrument four: Employee green behavior Scale.

The scale was developed by Zhang et al (2021).

Scoring system:

The total score was categorized into low level if achieved (13– 30), moderate level was (31 – 48), and high level was considered when achieved (49 – 65).

Validity of instruments:

The validity of the four instruments was done by three experts in Administration Nursing Department who interviewed the instruments for content accuracy and internal validity. Also, professors were asked to judge the items for completeness and clarity (content validity). No suggestions were incorporated into instruments.

Reliability of instruments:

The reliability of four instruments was tested using the cronbach alpha reliability test. the cronbach alpha of the green intellectual capital was 2.69; green human capital was 0.88; green structural capital was 0.92; green relational capital is 0.89. Green Knowledge Management was 0.891.Green entrepreneurial self-efficacy was 0.899 and the Employee green behavior (EGB) was 0.91. These cronbach alpha reliability tests indicate that tools were acceptable in reliability to detect the objectives of the study.

Ethical Consideration

An approval with number (1042) was obtained from Ethical and Research Committee of the Faculty of Nursing, Menoufia University, and informed consent was obtained from the study sample. Intern nursing student were informed that participation is voluntary. They were assured that their data would be treated as confidential and that their anonymity would be maintained.

Pilot study

The pilot study was carried out on 10 % of the study sample to evaluate study instruments in terms of their clarity, applicability and time required to fulfill. It also used to explore their feasibility and according to this no modification was made.

Procedure

It took about 30–40 minutes to fulfill the four instruments. Data were collected within three months. Intern nursing students were informed to complete instruments. All study sample were given the option of participating in the study voluntarily.

Data Analysis

Data was entered and analyzed using SPSS (Statistical Package for Social Science) version 26. The range, mean, and standard deviation were computed for the quantitative data. Frequency analysis was done for qualitative data. Spearman's correlation coefficient (r) was used to assess the correlation between variables in cases when the data were not regularly distributed. Linear regression was used and the significance level used to interpret the findings of the significance tests.

Results

Table 1 shows that the percentage of the studied of intern nursing students who had experience of working in hospitals was (53.3%) while, more than half of them were female (60.0%).

Table 2 shows the mean and ranking of intern nursing students green intellectual capital dimensions. It clarified that that the highest mean was related to green structural capital (32.03±5.56), while the lowest mean was related to green human capital (17.37±3.46). There was a highly statistical significant difference between intern nursing students' mean grand total score of sub-items of GIC.

Figure (1): clarifies levels of intern Nursing Students' Green Intellectual Capital, Green Knowledge Management, Green Entrepreneurial Self Efficacy, and Green Behavior. It showed that near two thirds of studied sample had moderate level of green intellectual capital (65.5%). Furthermore, it clarified that the majority of the studied sample had moderate level of green knowledge management (86.6%). Moreover, it presented that the majority of the studied sample had moderate level of green entrepreneurial self-efficacy (78.5). Furthermore, it showed that (52.2%) had high level of green behavior.

Table (3) shows green intellectual capital's relation with green knowledge management, green entrepreneurial self-efficacy, and green behavior among intern nursing students. There was a high positive relation between intern nursing students' green intellectual capital, green knowledge management, green entrepreneurial self-efficacy, and green behavior.

Table (4): highlights the linear regression analysis between green intellectual capital as an independent variable and green knowledge management, green entrepreneurial self-efficacy, and green among intern nursing students as dependent variables. The model was highly significant statistically ($P<0.0001$), and revealed that the predictors account for green intellectual capital are green knowledge management, green entrepreneurial self-efficacy, and green behavior among intern nursing students.

Table (1): Distribution of the Intern Nursing Students according to their personal characteristics (Intern Nursing Students N=270).

Personal characteristics	Intern Nursing Students	
	N	%
Experience of previous working in hospitals		
Yes	144	53.3
No	126	46.7
Sex		
Male	108	40.0
Female	162	60.0
Total	270	100

Table (2): The Mean and Ranking of Intern Nursing Students Green Intellectual Capital Dimensions. (N=270).

Dimensions of Green Intellectual Capital	Range	Min-Maxi-mum Score	Mean ± SD	Mean %	Test of sig.	P value	Ranking
Green Human Capital	19.00	6.00-25.00	17.37± 3.46	69.48	t=82.445	0.000	3
Green Structural Capital	36.00	9.00-45.00	32.03± 5.56	71.18	t=94.676	0.000	1
Green Relational Capital	20.00	5.00-25.00	17.26± 3.37	69.04	t=84.103	0.000	2

Figure (1): Levels of Intern Nursing Students' Green Intellectual Capital, Green Knowledge Management, Green Entrepreneurial Self Efficacy, and Green Behavior (N=270).

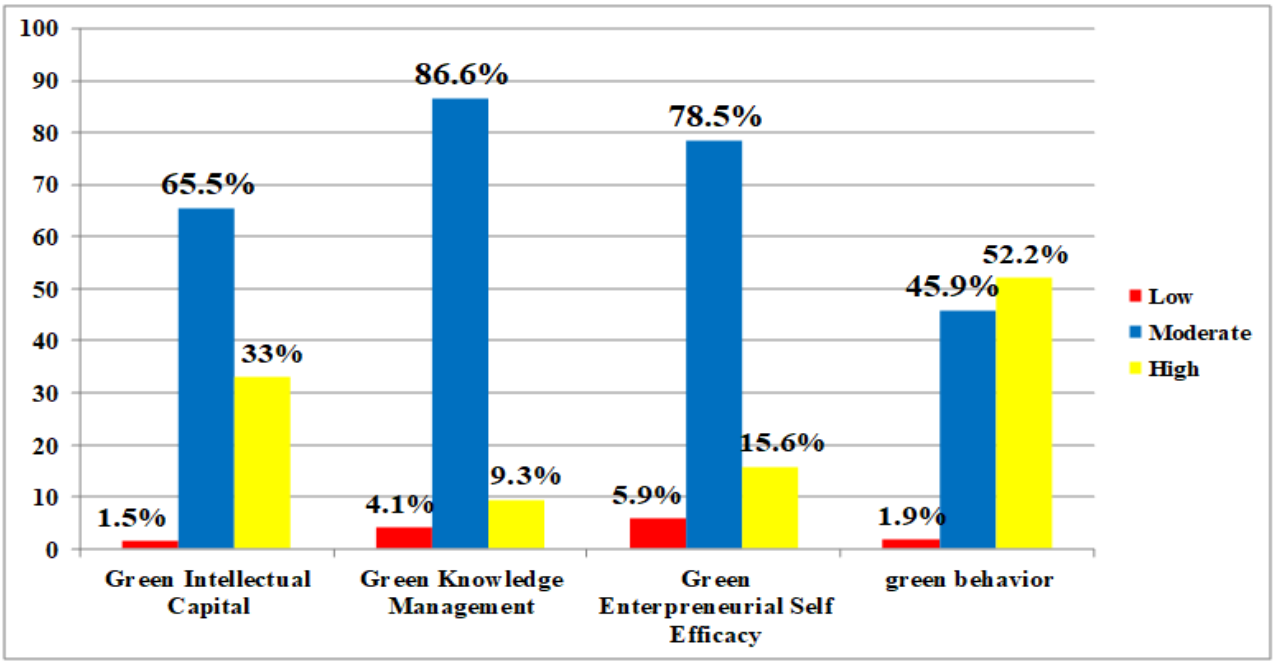

Table (3) Relation between Intern Nursing Students' Green Intellectual Capital, Green Knowledge Management, Green Entrepreneurial Self Efficacy, and Green Behavior (N=270).

Variables	Spearman's correlation coefficient r			
	Green Intellectual Capital		Green Knowledge Management	
	r	P	r	P
Green Knowledge Management	0.667	0.000**		
Green Entrepreneurial Self Efficacy	0.580	0.000**	0.500	0.000**
Green Behavior	0.698	0.000**	0.663	0.000**

(*) Statistically significant at p<0.05 (**) statistically significant at p<0.001

Table (4): Linear regression between green intellectual capital as an independent variable and green knowledge management, green entrepreneurial self-efficacy, and green behavior among intern nursing students as dependent variables (N=270).

Model	Unstandardized Coefficients		Standardized Coefficients	t	R^2	P-value.	Sig.
	β	Std. Error	β				
Green knowledge management	0.218	0.015	0.667	14.656	0.445	0.000	HS
Green entrepreneurial self-efficacy	0.132	0.011	0.580	11.652	0.336	0.000	HS
Green behavior	**0.568**	**0.036**	**0.698**	**15.958**	**0.487**	**0.000**	HS

NS= Not Significant, HS= High Significant.

Discussion

It is obviously that climate change impact initiates the concept of the Green Hospital which prioritizes Sustainable development objectives in healthcare. These objectives can be attained by implementing a green culture via green intellectual capital GIC. As similar, green knowledge management practice, green entrepreneurial self-efficacy ,and green behavior have a great role in advancing sustainable development (Atalla et al., 2024,ValléeAL, 2024, Abdelwahed, et al, 2025,and Othman et al., 2025).

For intern nursing students' Green intellectual capital, the results highlighted that near two thirds of studied intern nursing students had moderate level of green intellectual capital. Moreover, one third of them had high level of green intellectual capital. Researchers' points of view believe that these results could be caused by the fact that many hospitals begin to achieve Egypt strategy 20-30 regarding sustainability development goals. Similar the evolution of culture of green hospitals is increased gradually.

Also, intern nurse student are trained in hospitals that attained accreditation of quality. Also, presence of continuing education department that tolerate culture of sustainable development ,so hospitals has more environmental protection innovations and having

stable and well-cooperation relationships with other.

Atalla al. (2024) is in agreement with study results. This study highlighted that most nurses had a moderate level of green intellectual capital as a result of Egypt vision that taking proactive steps to protect the environment in the healthcare industry. Roughly, these results are in general consistent with Zaki (2023) as the half of head nurses had a moderate sense of it. On the contrary, Yusliza et al. (2020) and Swanson (2022) noticed that the staff member's perception of the level of GIC was low.

Regarding to dimensions of green intellectual capital, the result clarified that the highest mean was related to green structural capital, while the lowest mean was related to green human capital. Based on researchers' view, these findings are due to hospitals have environmental management based on environmental protection facilities that create green culture and successful environmental protection operations. Also, Hospitals' knowledge management system promotes the growth and sharing of environmental management expertise. So, green structural capital had the highest mean.

Atalla et al. (2024) support the study results as it stated that green structural capital was the highest mean. However, According to the Zaki (2023) study the first ranking with the highest mean score was related to the green human capital dimension that due to the effectiveness of any hospital is primarily dependent on its leaders and staff. Also, Ullah et al. (2020), which found that staff are supposed to acquire advantages from human capital.

For the relation between green intellectual capital and green knowledge management among intern nursing students, the results clarified that there was a high positive relation between green intellectual capital and green knowledge management and the majority of them had moderate level of green knowledge management. Also, results revealed green knowledge management as dependent variable to green intellectual capital ($P<0.0001$).

From researchers' points of view the possible explanation is that the information within organization are best-in-class environmentally friendly practices and easily accessible to intern nursing students by presence of green intellectual capital in the hospital. Additionally, the hospital has policies about the environmental protection. Thus hospitals create programs that encourage the sharing of green information.

Similarly, Chen (2008) highlighted that green intellectual capital activate knowledge management system about environmental management in the work Also, this study stated that green intellectual capital is favorable for sharing of the knowledge of environmental management.

Also, Khan et al. (2024) supported the results as they stated a relationship between green knowledge management and green human capital. Also, this study highlighted that aspects of green intellectual capital were found to be significant mediators for interactions

and correlations between green knowledge management and sustainable performance.

For the relation between green intellectual capital and green entrepreneurial self-efficacy among intern nursing students, results clarified that a high positive relation between green intellectual capital and green entrepreneurial self-efficacy. Also, the majority of the studied sample had moderate level of green entrepreneurial self-efficacy. Moreover, results revealed green entrepreneurial self-efficacy as dependent variable to green intellectual capital.

From researchers' points of view, these results ought to that hospitals attempt to adopt a green culture that base on green intellectual capital, so use all channels to communicate Sustainable Development Goals. As a result, nursing students are considering ways to improve the environment and help resolve environmental problems so everyone can contribute to the solution of environmental issues.

In the same direction, Zaki et al. (2023) study was consistent to these results as it stated that green intellectual capital is one of the important mechanisms that help organization to achieve excellence and improve the level of performance and its reputation and has effect on entrepreneurial orientation of organization.

Similar, Abd El-Hamid and El-Ghannam (2022) demonstrates that less than one quarter of the nurse interns had low level of entrepreneurial self-efficacy and about three quarter of them had high level of entrepreneurial self-efficacy. The research at hand was structured to evaluate the repercussions of ESE on the entrepreneurial aspirations of nurse interns.

In the same line, Wang et al. (2021) and Ahmed (2020) reported that practice of green entrepreneurial self-efficacy is related to solution of environmental problems and save the environment. Thus it plays a favorable role in driving organizational sustainability and performance.

For the relation between green intellectual capital and to green behavior among intern nursing students, the study revealed that it is high positive relation plus the majority of the studied intern nursing students had high and moderate level. Also, results revealed that green behavior as dependent variable to green intellectual capital ($P<0.0001$).

Based on researchers' view, this outcome may be due to intern nursing students engage in training offered by the hospital that focuses on environmental protection that enforced by green intellectual capital. Additional, hospital management may support them to execute the duties in an eco-friendly manner and decrease harmful environmental.

Similar, Elkhouly and elsawah (2024) study supported the study results. As this study revealed that overall levels of nurse perception of green behavior were moderate. Also, this study highlighted the fact that nurses are essential in sustainable work.

In the same way, Iqbal et al. (2018) found that sustainability and nurses' GB

are strongly correlated. In contrast, Moustafa et al. (2024) study isn't matching with study results. It highlighted that the implementation of the Green transformational educational intervention enhances GB among nurse managers.

Similarly, Zaki et al. (2023) highlighted that green intellectual capital is one of the important mechanisms that help organization to achieve excellence performance and promote sustainability of healthcare organizations. Furthermore, green intellectual capital is a workable solution to environmental problems

Conclusion

Based on the study results, it is obviously the bright role that is being played by Green intellectual capital in nursing . As the study revealed a high positive relation Green intellectual capital, green knowledge management, green entrepreneurial self-efficacy, and green behavior among between intern nursing students. Moreover, near two thirds of studied sample intern nursing students had moderate level of green intellectual capital. Also, the highest mean of dimensions was related to green structural capital, while the lowest mean was related to green human capital. Furthermore, Furthermore, it clarified that the high percentage of the studied sample had moderate level of green knowledge management, green entrepreneurial self-efficacy, and high level of green behavior.

Furthermore, by using linear regression that was highly significant statistically ($P<0.0001$), and revealed that the predictors account for green intellectual capital as an independent variable and green knowledge management, green entrepreneurial self-efficacy, and green behavior among intern nursing students as dependent variables.

Recommendations

Based on the findings, the following recommendations are proposed

- The integration of green intellectual capital and sustainability development concepts into training program by using different educational strategies for intern nursing students
- Continuous updating of hospitals' understanding of green intellectual capital through workshops and initiatives.
- The establishment of an effective knowledge management system to support the growth and dissemination of environmental knowledge in hospitals
- The full support of the hospital managers for their staff including intern nursing students to achieve their jobs via environmental protection.
- Strengthen of communication channels to enhance relationships and cooperation regarding environmental protection within Hospitals.
- Promotion of evidence-based research concerning green knowledge management, green entrepreneurial self-efficacy and green practices in nursing field.

Reference

Abbas, J., & Khan, S. M. (2022). Green knowledge management and organizational green culture: an interaction for organizational green innovation and green performance. Journal of Knowledge Management, 27(7), 1852–1870. https://doi.org/10.1108/jkm-03-2022-0156

Abd El-Hamid L. A., El-Ghannam H. M.(2022). Entrepreneurial Self-Efficacy and Its Influence on Entrepreneurial Intention among Nurse Interns. Egyptian Journal of Nursing & Health Sciences, EJNHS Vol.3, No.2 2022

Abdelwahed, N.A.A., Al Doghan, M.A., Saraih, U.N. and Soomro, B.A. (2025), "Green knowledge management practices and green innovation: unveiling the mediating influence of green culture and green entrepreneurial self-efficacy", VINE Journal of Information and Knowledge Management Systems, Vol. ahead-of-print No. ahead-of-print. https://doi.org/10.1108/VJIKMS-07-2023-0180

Aboramadan. M(2022) The effect of green HRM on employee green behaviors in higher education: the mediating mechanism of green Effect of green HRM; International Journal of Organizational Analysis Vol. 30 No. 1, 2022 pp. 7-23 Emerald Publishing Limited 1934-8835 DOI 10.1108/IJOA-05-2020-2190

Ahmed U. (2020). Impact of ecological innovation, entrepreneurial self-efficacy and entrepreneurial orientation on environmental performance and energy efficiency. Int. J. Energy Econ. Policy 10 289–295. [Google Scholar]

Ahmed R. M. & Abdel-Azeem A. M. (2022). Problems Facing Intern Nursing Students and Its Relation with their Perceived Stress Egyptian Journal of Health Care, 2022 EJHC Vol. 13 No. 1

Ahuja, J., Yadav, M. and Sergio, R.P. (2023), "Green leadership and pro-environmental behaviour: a moderated mediation model with rewards, self-efficacy and training", International Journal of Ethics and Systems,Vol.39No.2,pp.481-501.

Alfatis, S., & Nassani, A. (2023).The Influence of Intellectual Capital on Innovation and Creating Competitive Advantage: The Mediating Role of Knowledge Sharing and Innovation, Arab Journal of Administration,1-12. DOI: 10.21608/aja.2023.213440.1454.

Alsalami, Husam & Amanah, Ahmed. (2024). The Effect of Green Intellectual Capital on Organizational Reputation.

World conference on future innovations and sustainable solutions. 5-424. 10.5281/zenodo.13692255.

Asiaei, K., Jusoh, R., Barani, O., & Asiaei, A. (2022). How does green intellectual capital boost performance? The mediating role of environmental performance measurement systems, Environment and John Wiley & Sons Ltd, http://wileyonlinelibrary.com/journal/bse, 31 (4): 1587 1606.

Atalla ADG, Elbassal NAMM, Kandil FS, El-Ashry AM, Mohamed IAI, Behilak SEG, Elseesy NAM. Green intellectual capital: The secret ingredient for organizational competitive advantage in the nursing profession-a cross-sectional study from Egypt. Belitung Nurs J. 2024 Jun 28;10(3):304-311. doi: 10.33546/bnj.3306. PMID: 38947306; PMCID: PMC11211743.

Bamel, U., Pereira, V., Del Giudice, M., & Temouri, Y. (2022). The extent and impact of intellectual capital research: A two decade analysis. Journal of Intellectual Capital, 23(2), 375-400. https://doi.org/10.1108/JIC-05-2020-0142

Bontis, N.: 1999, 'Managing Organizational Knowledge by Diagnosing Intellectual Capital', International Journal of Technology Management 18(5–8), 433–462.

Chen Yu-Shan (2008). The Positive Effect of Green Intellectual Capital on Competitive Advantages of Firms Journal of Business Ethics (2008) 77:271–86 DOI 10.1007/s10551-006-9349-1

Chin, T., Shi, Y., Palladino, R., & Faggioni, F. (2022). A Yin-Yang dialectical systems theory of knowledge creation. Journal of Knowledge Management. https://doi.org/10.1108/jkm-07-2022-0524

Elkhouly, S., & elsawah, E. (2024). Prosocial leadership and Organizational sustainability: moderating role of nurses' green behavior. International Egyptian Journal of Nursing Sciences and Research, (), -. doi: 10.21608/ejnsr.2023.240493.1321

Farooq, R., Zhang, Z., Talwar, S. and Dhir, A. (2022), "Do green human resource management and self-efficacy facilitate green creativity? A study of luxury hotels and resorts", Journal of Sustainable Tourism, Vol. 30No.4,pp.824-845.

Gilal, F.G., Ashraf, Z., Gilal, N.G., Gilal, R.G. and Chaana, N.A. (2019), "Promoting environmental performance through green human resource management practices in higher education institutions: a moderated mediation model",

Corporate Social Responsibility and Environmental Management,No.6,pp.1579-1590.

Herlina, M.G., Iskandar, K., & Dewi, D. (2025). From Values to Climate Action: The Impact of Green Self-Efficacy on Pro Environmental Behaviour in Greater Jakarta's Higher Education Zillenials (SDG 13 View); E3S Web of Conferences 601, 00039 () https://doi.org/10.1051/e3sconf/202560100039 ICEGC'2024

Hockerts, K. (2017). Determinants of Social Entrepreneurial Intentions. Entrepreneurship 41, 105–130. doi: 10.1111/etap.12171

Huang ZE, Qiu X, Fu YQ, Zhang AD, Huang H, Liu J, Yan J, Yi QF. (2024)Clinical internship environment and caring behaviours among nursing students: A moderated mediation model. Nurs Ethics. 2024 Dec;31(8):1481-1498. doi: 10.1177/09697330231225393. Epub 2024 Feb 27. PMID: 38414219.

Huang, J. W., & Li, Y. H. (2017). Green innovation and performance: The view of organi- zational capability and social reciprocity. Journal of Business Ethics, 145(2), 309–324. doi:10.1007/S10551-015-2903-Y/TABLES/4.

Huang ZE, Qiu X, Fu YQ, Zhang AD, Huang H, Liu J, Yan J, Yi QF. Clinical internship environment and caring behaviours among nursing students: A moderated mediation model. Nurs Ethics. 2024 Dec;31(8):1481-1498. doi: 10.1177/09697330231225393. Epub 2024 Feb 27. PMID: 38414219.

Iqbal, Q., Hassan, S. H., Akhtar, S., & Khan, S. (2018). Employee's green behavior for environmental sustainability: A case of banking sector in Pakistan. World Journal of Science, Technology and Sustainable Development, 15(2), 118-130.

Johnson, W. H. A.: 1999, 'An Integrative Taxonomy of Intellectual Capital: Measuring the Stock and Flow of Intellectual Capital Components in the Firm', Inter- national Journal of Technology Management 18(5–8), 562–575.

Katz IM,Rauvola RS,Rudolph CW,Zacher H.2022.Employee green behavior: a meta-analysis.Corp. Soc. Responsib. Environ. Manag. 29:1146–57; DOI:10.1002/csr.2260. wileyon

Khan A.N., Mehmood K., Kwan H. K.(2024). Green knowledge management: A key driver of green technology innovation and sustainable performance in

the construction organizations, Journal of Innovation & Knowledge,Volume 9, Issue https://doi.org/10.1016/j.jik.2023.100455.

Liao, H., Hsu, C., & Chiang, H. (2021). How does green intellectual capital influence employee pro-environmental behavior? The mediating role of corporate social responsibility, International Journal of Management Studies, 28 (2): 27-47.

Mao, H., Liu, S., Zhang, J., & Deng, Z. (2016). Information technology resource, knowledge management capability, and competitive advantage: The moderating role of resource commitment. Int J Inf Manage, 36(6), 1062–1074. doi:10.1016/J.IJINFOMGT.2016.07.001.

Mohamad, A. A., Ramayah, T., & Lo, M. C. (2020). Sustainable Knowledge Management and Firm Innovativeness: The Contingent Role of Innovative Culture. Sustainability, 12(17), 6910. https://doi.org/10.3390/su12176910

Moustafa Saleh, M.S., Elsabahy, H.E., Abdel-Sattar, S.AL. et al. (2024). Fostering green transformational leadership: the influence of green educational intervention on nurse managers' green behavior and creativity. BMC Nurs 23, 393 (2024). https://doi.org/10.1186/s12912-024-01991-0

Mughal, M.F., Cai, S.L., Faraz, N.A. and Ahmed, F. (2022), "Environmentally specific servant leadership and employees' pro environmental behavior :mediating role of green self-efficacy", Psychology Research and BehaviorManagement,Vol.15, pp.305-316

Othman, A.A., Abdelall, H.A. & Ali, H.I. Enhancing nurses' sustainability consciousness and its effect on green behavior intention and green advocacy: quasi-experimental study. BMC Nurs 24, 475 (2025). https://doi.org/10.1186/s12912-025-02987-0

Quynh MP, Van MH, Le-Dinh T, Nguyen TTH (2022) The role of climate finance in achieving Cop26 goals: evidence from N-11 countries. Cuadernos De Economía 45(128):1–12

Rajiani, I., & Normuslim, N. (2023). Knowledge management and organizational learning to improve the organizational performance of mines in Indonesia. Journal of Infrastructure, Policy and Development, 7(2), 2227. https://doi.org/10.24294/jipd.v7i2.2227

Rehman, G., Hussain, N., Jehangir, M., Irfan, M., & Rafiq,M. (2025). Moderating Role of Green Self Efficacy between Green

Transformational Leadership and Green Creativity; Journal of Business and Management Research; Online ISSN 2958-5074, Print ISSN 2958-5066; Vol. 4, issue.1.

Sadiq M, Moslehpour M, Qiu R, Hieu VM, Duong KD, Ngo TQ (2023) Sharing economy benefits and sustainable development goals: empirical evidence from the transportation industry of Vietnam. J Innov Knowl. https://doi.org/10.1016/j.jik.2022.100290

Sahoo, S., Kumar, A., & Upadhyay, | Arvind (2022). How do green knowledge manage- ment and green technology innovation impact corporate environmental perfor- mance? Understanding the role of green knowledge acquisition. Business Strategy and the Environment. doi:10.1002/BSE.3160.

Sahoo, S., Kumar, A., Upadhyay, A. (2023). How do green knowledge management and green technology innovation impact corporate environmental performance? Understanding the role of green knowledge acquisition; BusStratEnv; 32:551–569. wileyonlinelibrary.com/journal/bse

Sapiai, N., Mat Nawi, H., Wan Mustapha, W.M, Yusuf, N., Zainudin, F.M. (2025). The Role of Green Knowledge Management in Driving Organizational Green Innovation: A Systematic Literature Review ; International Journal Of Academic Research In Business And Social Sciences; Vol 15, Issue 2, E-ISSN: 2222-6990; http://dx.doi.org/10.6007/IJARBSS/v15-i2/24755 DOI:10.6007/IJARBSS/v15-i2/24755

Serenko, A. and Bontis, N. (2022), "Global ranking of knowledge management and intellectual capital academicjournals:a2021update",JournalofKnowledgeManagement,Vol.26No.1,pp.126-145.

Shehzad, M. U., Zhang, J., Dost, M., Ahmad, M. S., & Alam, S. (2023). Linking Green Intellectual Capital, ambidextrous green innovation and firms green performance: Evidence from Pakistani manufacturing firms. Journal of Intellectual Capital, 24(4), 974-1001. https://doi.org/10.1108/JIC-02-2022-0032

Swanson, R. (2022). Foundations of human resource development.3rd ed., Berrett Koehler Publishers.USA.

Tan LP, Sadiq M, Aldeehani TM, Ehsanullah S, Mutira P, Vu HM (2021) How COVID-19 induced panic on stock price and green f inance markets: global economic recovery

nexus from volatil ity dynamics. Environ Sci Pollut Res. https:// doi. org/ 10. 1007/ s11356-021-17774-y

Ullah, S., Ozturk, I., Usman, A., Majeed, M., & Akhtar, P. (2020). On the asymmetric effects of premature deindustrialization on CO2 emissions: Evidence from Pakistan. Environmental Science and Pollution Research International, 27(12): 13692–13702

Vallée A. (2024) Green hospitals face to climate change: Between sobriety and resilience. Heliyon. 2024;10(2):e24769. http://dx.doi.org/10.1016/j.heliyon.2024.e24769

Wang, W., Cao, Q., Zhuo, C., Mou, Y., Pu, Z., and Zhou, Y. (2021). COVID-19 to Green Entrepreneurial Intention: Role of Green Entrepreneurial Self-Efficacy, Optimism, Ecological Values, Social Responsibility, and Green Entrepreneurial Motivation. Front. Psychol. 12:732904. doi: 10.3389/fpsyg.2021.732904

Widyanti, R., Rajiani, I., & Basuki, B. (2024). Green knowledge management to achieve corporate sustainable development ; Journal of Infrastructure, Policy and Development, 8(2), 2844. https://doi.org/10.24294/jipd.v8i2.2844

Yamane, Y. (1967). Mathematical Formulae for Sample Size Determination. Cited by Akosua, A.S., Yang, X., Clement, M., Zalia, A., & Fathia, B.V. (2021). City Logistics Measures and Environmental Sustainability: An Evidence from Ghana; American Journal of Industrial and Business Management, Vol.11 No.5.

Yang, K.-L., Wu, H.-K., Yeh, Y.-F., Lin, K.-Y., Wu, J.-Y., & Hsu, Y.-S. (2023). Implementers, designers, and disseminators of integrated STEM activities: self-efficacy and commitment. Research in Science & Technological Education, 41(4), 1433-1451.

Yu et al., (2022).Green knowledge management: Scale development and validation.Journal of Innovation & Knowledge,7;http://dx.doi.org/10.1016/j.jik.2022.100244

Yusliza, M., Yong, J., Tanveer, M., Ramayah, T., Faezah, J., & Muhammad, Z. (2020). A structural model of the impact of green intellectual capital on sustainable performance, Journal of Cleaner Production, 249, 119334 https://doi.org/10.1016/j.jclepro.2019.119334.

Zacher,H., Rudolph,C.W., and Katz, I.M. (2023). Employee Green Behavior as the Core of Environmentally Sustainable

Organizations; Annu. Rev. Organ. Psychol. Organ. Behav; 10:465–94; The Annual Review of Organizational Psychology and Organizational Behavior is online at orgpsych.annualreviews.org https://doi.org/10.1146/annurev-orgpsych-120920 050421.

Zaki, A.K.A., Hanaa Azmi Saad, H.A., Elsaiad, H.S.A. (2023). Green Intellectual Capital: It's Relation to Organizational Reputation and Entrepreneurial Orientation among Head nurses; Egyptian Journal of Nursing & Health Sciences, EJNHS Vol.4, Issue.3 147. EJNHS | ISSN 2682-2563.

Zhang, B.; Yang, L.; Cheng, X.; Chen, F. (2021). How Does Employee Green Behavior Impact Employee Well-Being? An Empirical Analysis. Int. J. Environ. Res. Public Health, 18, 1669. https://doi.org/10.3390/ijerph18041669

Zhang, B.; Yang, L.; Cheng, X.; Chen, F. (2021)How Does Employee Green Behavior Impact Employee Well-Being? An Empirical Analysis. Int. J. Environ. Res. Public Health, 18, 1669. https://doi.org/10.3390/ijerph18041669

Zhao L, Chau KY, Tran TK, Sadiq M, Xuyen NTM, Phan TTH (2022) Enhancing green economic recovery through green bonds financ ing and energy efficiency investments. Econ Anal Policy. https://doi.org/10.1016/j.eap.2022.08.019