Assessing the Role of Social Capital in Promoting Water Conservation: A Study of Egyptian Universities

Noha Elshaarawy[1], Abdelrahman Yousri[2]

ABSTRACT

This study investigates the role of social capital in shaping environmental responsibility concerning water issues across three Egyptian universities: Beni Suef, Ain Shams, and Alexandria. Using the 36-item Bullen and Onyx social capital scale, a survey of approximately 120 participants was conducted to assess whether social capital and demographic factors influence a sense of responsibility toward water conservation. Logistic regression analysis revealed that social capital was the only significant predictor of responsibility for water-related issues, while demographic factors such as gender, age, and qualifications did not have significant effects. Although the model as a whole was not statistically significant, these findings underscore the value of social capital in water management policies and strategies, suggesting it could play a key role in fostering community engagement and environmental stewardship. Future studies would benefit from a larger, more diverse sample that includes both public and private universities, as well as an enhanced social capital measure accounting for digital networks, income, and longitudinal data to strengthen the findings' relevance and impact.

Keywords: Social capital, water conservation, Egyptian universities, Bullen and Onyx scale.

INTRODUCTION

Egypt's water resources are predominantly sourced from the Nile River, which supplies approximately 55.5 billion cubic meters of water per year (State Information Service, 2009). However, Egypt has already surpassed the international threshold for water scarcity, and by 2025, it is expected to face "absolute water scarcity," with less than 500 cubic meters per person annually (Falkenmark, 1989). The World Bank reported that water scarcity and lack of sanitation led to around 8,200 deaths in Egypt in 2017, with an annual cost of EGP 39 billion (UNDP, 2021). Compounding these issues, agricultural runoff, industrial waste, and untreated sewage have heavily polluted the Nile and other water bodies, endangering public health and the environment (Helal *et al.*, 2021 and Elseedy *et al.*, 2023).

The situation is further complicated by rising sea levels, as saltwater from the Mediterranean intrudes inland, threatening freshwater supplies and agricultural lands. This is particularly problematic in the Nile Delta, where agriculture is already vulnerable to water quality and availability issues. Egypt's population, expected to exceed 150 million by 2050 (Daher, 2022), places increasing pressure on water resources, further exacerbated by climate change, which may lead to more frequent droughts and unpredictable rainfall (Hassan *et al.*, 2022 and Abdel-Hameed *et al.*, 2022).

Egyptian agriculture, consuming roughly 80% of the nation's water, remains inefficient, with traditional flood irrigation causing substantial water loss (Helal *et al.*, 2021 and Elseedy *et al.*, 2023). Water-intensive crops such as rice and sugarcane add further strain to resources. Beyond environmental implications, water scarcity jeopardizes Egypt's agricultural productivity, essential for food security and economic stability, potentially resulting in social unrest and poverty (El Bedawy, 2014).

Given these challenges, social capital—which includes networks, norms, and trust that foster collective action—can be pivotal in addressing water-related environmental issues. This paper explores the extent to which social capital and certain socio-demographic factors predict attitudes of "responsibility" toward water conservation and sustainable water use.

Social Capital

"Social capital" has evolved from the foundational ideas of sociologists like Pierre Bourdieu and James Coleman. Bourdieu viewed social capital as a communal asset comprising shared norms, trust, and networks that facilitate cooperation (Bhandari and Yasunobu, 2009). Coleman expanded this to emphasize social capital's role in fostering trust and cooperation, which can yield beneficial social outcomes (Azarian, 2001). Putnam later defined social capital as "features of social organization, such as trust, norms, and networks, that improve societal efficiency through coordinated actions" (Putnam, 1993, 1995). Studies have shown that nurturing social networks and trust within communities strengthens shared commitments to environmental stewardship.

DOI: 10.21608/asejaiqjsae.2024.397026
[1]Center of Excellence for Water, The American University in Cairo, New Cairo, Egypt
[2]Faculty of Economics and Political Science, Alexandria University, Alexandria, Egypt
Received, November 15, 2024, Accepted, December 15, 2024.

In the context of water conservation in Egypt, social capital can drive community engagement, promote sustainable practices, and enhance the effectiveness of water management initiatives.

Social Capital and Water Conservation

Recent literature underscores the importance of social capital in encouraging community participation, fostering trust, and promoting sustainable water practices. For instance, Bouma *et al.* (2008) found that social capital positively impacts household engagement in water conservation and infrastructure maintenance. Green *et al.* (2012) also highlighted that strong social networks increase community involvement in water-saving efforts. Similarly, a study in Indonesia revealed that social capital strengthened community ties to enhance groundwater conservation through infiltration wells (Istiyani and Wijayanto, 2022).

In contrast, low levels of trust can exacerbate conflicts over shared water resources, as shown in Hileman *et al.* (2016) and Mirzaei *et al.* (2020), who demonstrated that social capital supports community-based water management and conflict resolution. High levels of social capital also contribute to adaptive, resilient communities that can more effectively handle green economy transitions (Pawlewicz and Cieślak, 2024) and encourage pro-environmental behaviors (Shi *et al.*, 2022).

Jones *et al.* (2011) emphasized that understanding social implications is vital for the success of environmental policies, as social capital affects citizen perceptions and acceptance of conservation measures. Case studies, such as those by Yudiatmaja & Samnuzulsari (2020) and Zhang *et al.* (2021), illustrate how communities utilize social capital to manage water resources effectively, highlighting the role of trust, norms, and cooperation in ecological protection.

In addition, social capital's role in governance underscores the need for community participation in environmental decision-making, with Zhang and Gu (2021) noting that social capital enhances transparency and governance efficiency.

In conclusion, social capital is integral to water conservation, fostering community participation, cooperation, and positive attitudes toward sustainable practices.

MATERIAL AND METHODS

This study employs Bullen and Onyx's 36-item social capital scale, a well-established tool for measuring various dimensions of social capital, including community participation, trust, and social networks. In the appendix, we provide the full list of 36 items capturing the distinct dimensions of social capital as identified by Bullen and Onyx (Bullen and Onyx, 2005, 2007).

Our analysis will proceed in three stages:

1. **Measuring Social Capital and Demographic Factors**: We will utilize the Bullen and Onyx social capital scale to measure participants' levels of social capital. Additionally, we will collect demographic data such as age, gender, and education level, which may also influence participants' attitudes toward water conservation.
2. **Assessing the Relationship Between Social Capital and Water-Related Responsibility**: We aim to evaluate the connection between social capital, demographic factors, and individuals' feelings of responsibility toward water issues within their communities.
3. **Logistic Regression Analysis**: We will develop logistic regression models to examine the extent to which social capital and demographic factors predict participants' sense of responsibility for water conservation issues in their universities.

Variables

1. **Dependent Variable**: Responsibility for water issues. This will be measured by asking participants if, within the past two years, they felt a sense of responsibility as community members to address water scarcity issues. Responses will be binary (yes/no).
2. **Independent Variables**:

1- **Demographic Characteristics**: Age, gender, and education level.

2- **Social Capital**: Measured using Bullen and Onyx's 36-item scale, which encompasses eight domains:

i. Participation in the Local Community
ii. Proactivity in a Social Context
iii. Feelings of Trust and Safety
iv. Neighborhood Connections
v. Family and Friends
vi. Tolerance of Diversity
vii. Value of Life
viii. Work Connections (Onyx and Bullen, 2001).

This approach will enable us to explore whether social capital and demographic factors contribute to individuals' sense of responsibility for addressing water-related issues, ultimately informing strategies to promote community engagement in water conservation.

Sample of study

The sample comprised 121 students between the ages of 20 and 51 in Beni Suef, Ain Shams, and Alexandria universities. Of the total sample, 44% were female and 56% male, and the average age was 26. Approximately 52% of were undergraduate students or just received their BSc., 40% had master's degree or pursuing it, 6% had PhD degree or pursing it, 2% have postdoctoral or pursuing it. The average social capital score was 89, with scores ranging from a minimum of 61 to a maximum of 126. Information about salaries were removed from the analysis as a large proportion of students didn't feel comfortable disclosing their incomes.

Data Analysis and Results

The questionnaire was analyzed using SPSS. Since the dependent variable is binary in nature, a logistic regression was conducted. The data was complete, with no missing values. The survey results indicate that 116 out of 121 students, or 96% of the sample, reported feeling a sense of responsibility toward addressing water-related issues.

Model Summary

The Nagelkerke R^2 value indicates that 19.3% of the variance in participants' sense of responsibility toward water-related issues can be explained by the predictors in the model, suggesting a relatively weak relationship between these predictors and the outcome variable (Table 1).

The unconditional probability of participants expressing a sense of responsibility toward water-related issues is 95.9%, which remained unchanged when the full model—including the independent variables—was applied. This suggests that adding the predictors did not improve the model's ability to explain or predict participants' sense of responsibility (Tables 2, 3).

The Likelihood Ratio (LR) chi-square test indicated that our model was not statistically significant, χ^2 (6) = 7.016, $p > 0.05$. This result suggests that our model does not fit the data significantly better than a model without predictor variables. The full model was assessed using the LR test to determine if it offered a significant improvement over the null model (indicated by a p-value < 0.05). However, the comparison showed that the model was statistically insignificant (Table 4), indicating no substantial enhancement in predictive power from the inclusion of the independent variables.

When each independent variable—gender, age, qualifications, and social capital—was tested individually, only social capital emerged as a significant predictor of participants' likelihood of feeling responsible toward water scarcity (Table 5).

Table 1. Variance explained by predictors

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	34.638[a]	0.056	0.193

a. Estimation terminated at iteration number 20 because maximum iterations has been reached. Final solution cannot be found.
Source: Sample analysis

Table 2. Classification Table[a,b]

			Predicted		
			In the last two years, as a member of the local community, have you felt any level of responsibility towards addressing water scarcity/pollution issues.		Percentage
	Observed		No	Yes	Correct
Step 0	In the last two years, as a member of the local community, have you felt any level of responsibility towards addressing water scarcity/pollution issues.	No	0	5	0.0
		Yes	0	116	100.0
	Overall Percentage				95.9

a. Constant is included in the model.
b. The cut value is 0.500
Source: Sample analysis

Table 3. Classification Table[a]

			Predicted		
			In the last two years, as a member of the local community, have you felt any level of responsibility towards addressing water scarcity/pollution issues.		
	Observed		No	Yes	Percentage Correct
Step 1	In the last two years, as a member of the local community, have you felt any level of responsibility towards addressing water scarcity/pollution issues.	No	0	5	0.0
		Yes	0	116	100.0
	Overall Percentage				95.9

3.1. The cut value is 0.500

Source: Sample analysis

Table 4. Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	7.016	6	0.319
	Block	7.016	6	0.319
	Model	7.016	6	0.319

Source: Sample analysis

Table 5. Variables in the Equation

		B	S.E.	Wald	Df	Sig.	Exp(B)	90% C.I.for EXP(B) Lower
Step 1[a]	SC TOTAL	0.094	0.048	3.763	1	0.052	1.098	1.014
	What is your gender?(1)	0.509	1.078	0.223	1	0.637	1.664	0.282
	What is your age in years?	-0.054	0.107	0.260	1	0.610	0.947	0.794
	What are your qualifications?			0.276	3	0.964		
	What are your qualifications?(1)	18.715	12856.982	0.000	1	0.999	134215316.077	0.000
	What are your qualifications?(2)	16.184	28413.511	0.000	1	1.000	10682708.667	0.000
	What are your qualifications?(3)	-0.666	1.266	0.276	1	0.599	0.514	0.064
	Constant	-3.035	4.495	0.456	1	0.500	0.048	

1.Variable(s) entered on step 1: SC TOTAL, What is your gender?, What is your age in years?, What are your qualifications?.

Source: Sample analysis

DISCUSSION

A logistic regression analysis was conducted to assess the effects of social capital, gender, age, and qualifications on the likelihood of participants feeling responsible toward water scarcity. The model, however, was not statistically significant when compared to the null model (χ^2 (6) = 7.016, p > 0.05), explaining only 19% of the variance in participants' feelings of responsibility (Nagelkerke R^2) and achieving a correct classification rate of 95.9%. Notably, when independent variables were tested separately, only social capital was found to significantly predict the likelihood of feeling responsible for water scarcity at 10% significance level, while gender, age, and qualifications were not significant predictors.

Future studies would benefit from a more extensive and diverse larger sample that includes participants from both public and private universities to better represent varied demographic groups. Adding a measure of monthly income as a proxy for socioeconomic status, conducting a longitudinal study to observe changes over time, and developing an enhanced social capital measure that incorporates digital social networks could further strengthen the robustness and applicability of the findings.

ACKNOWLEDGEMENTS

The research team gratefully acknowledges the Center of Excellence (CEO) for their essential funding, which was instrumental in completing this study. This research was made possible by the generous support of USAID, in partnership with the American University in Cairo (AUC).

REFERENCES

Abdel-Hameed, A.M., M.E.S. Abuarab, N. Al-Ansari, H.S. Mehawed, M.A. Kassem, H. He, Y. Gyasi-Agyei and A. Mokhtar. 2022. Winter potato water footprint response to climate change in Egypt. Atmosphere 13: 1052.

Azarian, R. 2001. Social capital: a theory of social structure and action. Acta Sociol. 44: 341-343.

Bhandari, H. and K. Yasunobu. 2009. What is social capital? a comprehensive review of the concept. Asian J. Soc. Sci. 37: 480-510.

Bouma, J., E. Bulte and D. Van Soest. 2008. Trust and cooperation: social capital and community resource management. J. Environ. Econ. Manag. 56: 155-166.

Bullen, P. and J. Onyx. 2005. Measuring social capital in five communities in NSW: a practitioner's guide (2nd ed.). Coogee, NSW: Management Alternatives.

Bullen, P. and J. Onyx. 2007. Social capital: the measurement tool. PO Box, 181.

Daher, R. 2022. Beyond scarcity: an assessment of water management in Egypt from a political ecology perspective. Hungarian J. Afr. Stud. 16, 21.

El Bedawy, R. 2014. Water resources management: alarming crisis for Egypt. J. Mgmt. Sustainability 4, 108.

Elseedy, M.E., D.S. Helaly, M.A. El-Sherpiny and A.A. Taha. 2023. Drought stress effects on vegetable crop productivity: melatonin's mitigating role and rhizobium inoculants for enhanced nitrogen fixation under water scarcity. J. Soil Sci. Agric. Eng. 14: 255-265.

Falkenmark, M. 1989. The massive water scarcity now threatening Africa: why isn't it being addressed?.Ambio 18: 112-118.

Green, O.O., W.D. Shuster, A.S. Garmestani, H.W. Thurston and L.K. Rhea. 2012. Engaging social capital for decentralized urban stormwater management. U.S. Environmental Protection Agency Papers. Paper 194. http://digitalcommons.unl.edu/usepapapers/194

Hassan, I.F., R. Ajaj, M.S. Gaballah, C.C. Ogbaga, H.M. Kalaji, H.M. Hatterman-Valenti and S.M. Alam-Eldein. 2022. Foliar application of nano-silicon improves the physiological and biochemical characteristics of 'Kalamata'olive subjected to deficit irrigation in a semi-arid climate. Plants 11, 1561.

Helal, E., M. Shaban, E. Abd El-Karim and A. Ellayen. 2021. A comprehensive management model to maximize the benefits of agriculture drainage water reuse. Water Environ. Res. 93: 1722-1733.

Hileman, J., P. Hicks and R. Jones. 2016. An alternative framework for analysing and managing conflicts in integrated water resources management (IWRM): linking theory and practice. Int. J. Water Resour. Dev. 32: 675-691.

Istiyani, A. and D. Wijayanto. 2022. The role of social capital in the circular economy of water management: a case study. MIMBAR: Jurnal Sosial Dan Pembangunan 38: 215-222.

Jones, N., K. Evangelinos, P. Gaganis and E. Polyzou. 2011. Citizens' perceptions on water conservation policies and the role of social capital. Water Resour. Manag. 25: 509-522.

Mirzaei, A., A. Knierim, S. Fealy Nahavand and M. Shemshad. 2020. The role of social capital in water reservoirs governance: evidence from northern Iran. Hum. Ecol. 48: 491-503.

Onyx, J. and P. Bullen. 2001. The different faces of social capital in NSW Australia. In: Dekker, P., Uslaner, E.M. (eds). So cial capital and participation in everyday life. London: Routledge, pp. 88–111.

Onyx, J., L. Osburn and P. Bullen. 2004. Response to the environment: social capital and sustainability. Australas. J. Environ. Manag. 11: 212-219.

Pawlewicz, K. and I. Cieślak. 2024. An Analysis of the Relationships between social capital levels and selected green economy indicators on the example of polish voivodeships. Sustainability 16, 1459.

Putnam, R. 1995. Bowling Alone: America's declining social capital. J. Democr. 6: 65-78.

Putnam, R.D. 1993. Making democracy work: civic tradition and modern Italy. Princeton, NJ: Princeton University Press. https://doi.org/10.2307/j.ctt7s8r7

Shi, J., C. Lu and Z. Wei. 2022. Effects of social capital on pro-environmental behaviors in Chinese residents. Sustainability 14, 13855.

State Information Service. 2009. Egypt and Water Issue. https://www.sis.gov.eg/Story/176/Egypt-and-Water-Issue.

UNDP. 2021. Egypt Human Development Report 2021. https://www.undp.org/egypt/egypt-human-development-report-2021

Yudiatmaja, W.E. and T. Samnuzulsari. 2020. Social capital of local communities in the water resources management: an insight from Kepulauan Riau. In IOP Conference Series: Materials Science and Engineering. IOP Publishing. 771, 012067.

Zhang, S. and Z. Gu. 2021. Impact of social capital on environmental governance efficiency—behavior of guangdong, China. Front. Energy Res. 9, 781657.

Zhang, S., M. Zhao, Q. Ni and Y. Cai. 2021. Modelling farmers' watershed ecological protection behaviour with the value-belief-norm theory: a case study of the wei river basin. Int. J. Environ. Res. Public Health 18, 5023.

APPENDIX

The 36 Items of Bullen and Onyx's Social Capital Scale and demographic questions used in the questionnaire:

1) In the last two years, as a member of the local community, have you felt any level of responsibility towards addressing water scarcity issues.

a) Yes

b) No

Social Capital Scale

For each of the following questions, please select the option that best reflects your experiences or opinions by circling the number that corresponds to your answer:

2. Do you feel recognized and appreciated by society?

No, not much Yes, very much

1 2 3 4

3. If your life were to end tomorrow, would you be content with its significance?

No, not much Yes, very much

1 2 3 4

4. Have you ever cleaned up litter in a public space?

No, never Yes, frequently

1 2 3 4

5. Do you agree that helping others ultimately benefits you as well?

No, not much Yes, very much

1 2 3 4

6. Do you volunteer with any local organizations or groups?

No, not at all Yes, often (at least once a week)

1 2 3 4

7. Do you feel safe walking in your neighborhood at night?

No, not much Yes, very much

1 2 3 4

8. Do you trust most people?

No, not much Yes, very much

1 2 3 4

9. If someone's car broke down near your home, would you invite them in to use the phone?

No, not at all Yes, definitely

1 2 3 4

10. Can you rely on friends for help when needed?

No, not at all Yes, definitely

1 2 3 4

11. Is your area considered a safe place to live?

No, not at all Yes

1 2 3 4

12. If you needed to leave for a while when caring for a child, would you feel comfortable asking a neighbor for assistance?

No, not at all Yes, definitely

1 2 3 4

13. In the past week, have you spent time visiting a neighbor?

No, not at all Yes, frequently

1 2 3 4

14. Over the last six months, have you participated in a local community event (e.g., religious gathering, school activity, or fair)?

No, not at all Yes, several (at least 3)

1 2 3 4

15. Are you actively involved in a local organization or club (e.g., sports, crafts, or social groups)?

No, not at all *Yes, very active*

1 2 3 4

16. Does your local community feel like a place where you belong?

No, not at all Yes

1 2 3 4

17. Over the past week, how many phone conversations have you had with friends?

None at all Many

1 2 3 4

18. How many people did you interact with yesterday?

None at all Many (at least 10)

1 2 3 4

19. Over the weekend, did you share a meal with people outside your household?

No, not much Yes, nearly always

1 2 3 4

20. Do you go outside your local community to visit your family?

No, not much Yes, nearly always

1 2 3 4

21. While shopping locally, how often do you encounter friends or acquaintances?

No, not much Yes, nearly always

1 2 3 4

22. If you needed advice to make a major life decision, do you know where to find it?

No, not at all Yes, definitely

1 2 3 4

23. In the last six months, have you helped a sick neighbor?

No, not at all Yes, frequently (at least 5 times)

1 2 3 4

24. Are you a member of any local committees or organizing groups?

No, not at all Yes, several (at least 3)

1 2 3 4

25. Over the last three years, have you participated in emergency community actions?

No, not at all Yes, frequently (at least 5 times)

1 2 3 4

26. In the past three years, have you been involved in a local community project?

No, not at all Yes, very much

1 2 3 4

27. Have you helped organize a new service in your area (e.g., youth programs, clean water initiatives)?

No, not at all Yes, several times (at least 3)

1 2 3 4

28. Would you feel comfortable voicing disagreement even if others unanimously agreed?

No, not at all Yes, definitely
1 2 3 4

29. If you had a conflict with your neighbors (e.g., about noise, pets would you seek mediation?
No, not at all Yes, definitely
1 2 3 4

30. Do you appreciate living among individuals with different lifestyles?
No, not at all Yes, definitely
1 2 3 4

31. If a new and different neighbor moved in, would they be accepted by the community?
No, not easily Yes, definitely
1 2 3 4

Work-Related Questions (for employed respondents).

32. Do you feel connected to the local community where you work?
No, not at all Yes, definitely
1 2 3 4

33. Are your coworkers also your friends?
No, not at all Yes, definitely
1 2 3 4

34.Do you feel like an integral part of your workplace team?
No, not at all Yes, definitely
1 2 3 4

35. At work, do you take initiative even if tasks are not directly assigned to you?
No, not at all Yes, definitely
1 2 3 4

36-Last week, did you assist a coworker with something outside of your job responsibilities?
No, not at all Yes, several times (at least 5)
1 2 3 4

Demographic and Personal Questions

37. What is your Uniersity?
[ ] 1. Beni Suef
[ ] 2. Alexandria
[ ] 3. Ain Shams
[ ] 4. Other ()

38. What is your gender?
[ ] 1. Female
[ ] 2. Male

39. Are you employed?
[ ] Yes If yes, how many hours per week..... [ ] No

40. What is your age in years? ..... Years

41. Do you own your house?
[ ] 1.Yes [ ] 2. No

42. Are you renting your accommodation?
[ ] 1.Yes [ ] 2. No

43. How long have you lived in your local area?..... years

44. Who do you live with?

[ ] 1. alone
[ ] 2. just partner
[ ] 3. just children
[ ] 4. partner and children
[ ] 5. extended family
[ ] 6. friends
[ ] 7. other

45. Do you have children under 18 years of age?

[ ] Yes If yes, How many under school age .....
How many school age to 18.....
[ ] No

46. What is the main source of income for your household?

[ ] 1. Wages or Salary
[ ] 2. Pension or benefit [ ] 3. Other

47. What is your current income?

1. Less than 5,000 Egyptian Pounds
2. 10,000 – 15,000 Egyptian Pounds
3. 15,000 – 20,000 Egyptian Pounds
4. 20,000 – 25,000 Egyptian Pounds
5. 25,000 – 30,000 Egyptian Pounds
6. More than 30,000 Egyptian Pounds

48. What are your qualifications

[ ] 1. Undergraduate
[ ] 2. MSc.
[ ] 3. PhD
[ ] 4. Postdoctoral

الملخص العربي

تقييم دور رأس المال الاجتماعي في تعزيز ترشيد المياه: دراسة على الجامعات المصرية

نهى الشعراوي، عبد الرحمن يسري

تبحث هذه الدراسة دور رأس المال الاجتماعي في تشكيل المسؤولية البيئية فيما يتعلق بقضايا المياه في ثلاث جامعات مصرية: بني سويف وعين شمس والإسكندرية. وباستخدام مقياس رأس المال الاجتماعي بولين وأونيكس المكون من ٣٦ بندًا، تم إجراء مسح لحوالي ١٢٠ مشاركًا لتقييم ما إذا كان رأس المال الاجتماعي والعوامل الديموغرافية تؤثر على الشعور بالمسؤولية تجاه الحفاظ على المياه. وكشف تحليل الانحدار اللوجستي أن رأس المال الاجتماعي كان المتنبئ الوحيد المهم بالمسؤولية عن القضايا المتعلقة بالمياه، في حين لم يكن للعوامل الديموغرافية مثل الجنس والعمر والمؤهلات تأثيرات كبيرة. وعلى الرغم من أن النموذج ككل لم يكن ذا دلالة إحصائية، إلا أن هذه النتائج تؤكد على قيمة رأس المال الاجتماعي في تشكيل سياسات واستراتيجيات إدارة المياه، مما يشير إلى أنه يمكن أن يلعب دورًا رئيسيًا في تعزيز مشاركة المجتمع والمسؤولية البيئية. وسوف تستفيد الدراسات المستقبلية من عينة أكبر وأكثر تنوعاً تشمل الجامعات العامة والخاصة، فضلاً عن مقياس معزز لرأس المال الاجتماعي يأخذ في الاعتبار الشبكات الرقمية والدخل والبيانات الطولية لتعزيز أهمية النتائج وتأثيرها.

الكلمات المفتاحية: رأس المال الاجتماعي، ترشيد المياه، الجامعات المصرية، مقياس بولين وأونيكس.