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Does Technological Environment Interact with Social Capital and Cooperative Society's Performance in Nigeria?

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Abstract

Purpose: Debate on cooperative society's performance has remained unabated for stakeholders since it is closer to the grassroots. Moreover, the influence of social capital has shown divergent outcomes. Nevertheless, the environment in which businesses operate is core. Therefore, this paper argues that social capital effect on cooperative societies' performance is significantly moderated by technological environment.

Materials and Methods: A cross-sectional survey research design was used in collecting data from 361 executives of cooperative societies operating in Ogun State, Nigeria, selected through the stratified sampling technique. Also conducted were the reliability and validity tests on the adapted questionnaire before utilizing it for this study.

Findings: The hierarchical regression analysis results revealed that social capital effect on cooperative societies performance in Ogun State, Nigeria, was negative and not significantly moderated by the technological environment (β= -0.016, t= -1.456, $\Delta R2$ = 0.001, ΔF= 2.120, p>0.05).

Implications to Theory, Practice and Policy: Since, statistically, the technological environment had a negative and insignificant effect strengthens the report by the AU Inter-Africa Information System and African Union Commission on Cooperatives, and thus, the need for executives of cooperative societies in Nigeria to invest in technology is germane because a business lagging in technology in this present era and business climate will gradually but surely not survive.

Keywords: *Technological Environment, Social Capital, Cooperative Societies, Business Environment, Hierarchical Regression*

1.0 INTRODUCTION

Globally, cooperative societies play a crucial role in promoting economic empowerment and social development. Through fostering cooperation and mutual support, cooperative societies contribute to the well-being and resilience of individuals and communities (Ceci et al., 2019; Ganau & Rodríguez-Pose, 2023; Rezaei-Moghaddam & Izadi, 2019). For instance, cooperatives are pillars of the United States of America's economy, with over 29,000 Cooperative societies contributing nearly $650 billion in annual revenue (USA Census Bureau, 2022). However, the performance of cooperative societies has declined with an average of 3.2% versus 4.6% for US cooperative societies (Hill, 2022). The declining performance further illustrates performance gaps, with average net margins of 1.7% for cooperatives falling short of the 2.5% outside the co-op sector (American Cooperative Bankers Association, 2022; United States Department of Agriculture USDA Rural Cooperative Service, 2021). Arizona in the USA is home to over 100 cooperative businesses in sectors ranging from agriculture and utilities to groceries and childcare. Nonetheless, profit lags threaten the incomes of 4 million cooperative members and the longevity of these community institutions in Arizona. More so, over the past five (5) years, average net profit margins for Arizona Cooperative societies have held at just 0.8%, less than half the margins of small private businesses statewide (Arizona Annual Cooperative Survey, 2022).

In Europe, the United Kingdom (UK) is home to a widespread and diverse cooperative movement, with over 7,000 registered cooperatives owned by 17 million members and contributing £ 34 billion yearly to the British economy. However, the performance of UK Cooperatives dwindled as trading profit fell 25.2% to £14.9m in 2023 compared to 2022 profit of £19.9m driven primarily by operational inefficiencies (Hadfield, 2023). Hadfield (2023) added that net debt rose to £19.6m in the 2nd quarter (Q2) 2023 compared to Q2 2022, which was £2.9m due to loss of profitability, and represents the overall poor performance of the institution. More so, UK Business Finance Review (2023) revealed that SME lending by Cooperatives declined in the first quarter of 2023 to a post-pandemic low of £3.7bn (Mambu, 2023). According to Mambu (2023) report, six in ten (58%) UK cooperatives have been unable to secure any or sufficient funding to cover the needs of their business. In Brazil, the Brazilian Institute of Geography and Statistics (BIGS, 2023) reported that a substantial 70% of cooperative societies in Brazil encounter financial constraints. Moreover, limited skilled personnel and insufficient expertise in cooperative management exist. This deficiency is underscored by data from the Cooperatives Confederation of Brazil (CCB, 2022), revealing that merely 30% of cooperative societies in the nation employ professionals with specialized training in cooperative management.

In Africa, cooperatives are core in each community, though their dwindling performance is a persistent concern (AU Economic Development Report, 2021). The African Union estimates just 18% of the continent’s cooperatives can be considered high-performing, with the remainder facing efficiency, profitability, and solvency struggles (AU Report on the Cooperative Economy, 2021). Aggregate net profit margins across Sub-Saharan Africa’s formalized cooperatives declined from $8.2 billion in 2017 to $7.1 billion in 2021 per AU metrology (AU Inter-Africa Information System, 2022). Underdeveloped supportive infrastructure constitutes a key performance barrier. Over 90% of surveyed cooperatives across 16 African nations report a lack of access to stable electricity grids, and over 65% continue to rely totally on paper-based record keeping per AU analysis, creating severe technology limitations (AU Commission on Cooperatives, 2019). For instance, in South Africa, the cooperative penetration rate is the lowest in the world, leading to a

decline in competitive advantage at 0.06% compared to Kenya (13.3%), Rwanda (13.8%), Togo (26.7%) and the worldwide average of 13.5% (Karitu & Muathe, 2023; Mushonga et al., 2019). In Nigeria, despite the vibrant entrepreneurial spirit of diverse sectors and a fertile ground for cooperatives (MAN Report, 2021), a World Bank (2022) report estimates that only 20% of formal cooperatives have access to financial services in Nigeria. Also, since 2018, the number of cooperatives declared financially insolvent has doubled to over 12,400 in 2020 (Nigerian Cooperative Societies Commission Audit Report, 2020). The situation is compounded further by a decline in average annual revenues, which fell by 16% from ₦42 billion in 2019 to ₦35 billion in 2021 (ActionAid Nigeria Study of Cooperatives, 2022).

Social capital, on the other hand, is crucial for the growth and development of both established and start-up companies, as it is a core channel for individuals, teams, and organizations to access information and resources from outside (Akintimehin et al., 2019; Mojo et al., 2017). Ceci et al. (2019) and Yu and Nilsson (2018) added that social capital involves trust and leadership because cooperatives are established not only as a group of individuals that perceives a shared problem but also because the individuals have sufficient trust in one another (Chen, 2019). Hence, trust is a condition for willingness to conduct trade with the cooperative, invest in it, and govern it (Mojo et al., 2017). Peng et al. (2022) further opined that social capital could create all other types of capital in cooperative business firms. Ganau and Rodríguez-Pose (2023) stressed that the way social capital influences economic performance at the aggregate (country, regional, or urban) level depends on how it affects the behavior and performance of individual economic actors. It is thus crucial to understand that the aggregate economic performance depends on the performance of individual firms, with each firm interacting heterogeneously, both through its workers and as an organizational structure as a whole, with other actors located within the same socioeconomic ecosystem (Ganau & Rodríguez-Pose, 2023; Muringani et al., 2021).

Despite these commentaries that have highlighted the dwindling performance of cooperative societies locally and globally and the core values of social capital, and in light of the technological environment in which businesses contend to survive due to the dynamism in the business environment, it is fascinating to investigate whether technological environment could moderate the effect social capital has on cooperative societies. Interestingly, previous studies have used more quantitative methodology on the technological environment as a predictor variable to determine how it relates to performance in varied sectors, as apparent in the studies of Mallimguh et al. (2020), Das et al. (2020), Munoz-Pascal et al. (2019), Valdebenito and Quelopana (2019), and Bagheri et al. (2019). These scholarly works have shown a link between the variables, though with some divergent results. Nevertheless, most of these studies were conducted in developed countries with a limited focus on SME firms as against the lens of cooperative societies that this study intends to uptake. Based on these previous studies, it can be deduced that technological environment association has not adequately been studied as a moderating effect of social capital and performance (Baidoo, 2020; Oluwakayode et al., 2020). Consequently, having identified the knowledge gap, this paper attempted to fill it by investigating if the effect of social capital on performance of cooperative societies in Ogun State, Nigeria, is moderated by technological environment. The formulated hypothesis for this paper is stated as:

H_{01}: Social capital effect on cooperative society's performance in Ogun State, Nigeria is not significantly moderated by technological environment

2.0 LITERATURE REVIEW

Cooperative Societies Performance

Performance is a concept that has received varied definitions based on industry-specific since performance is a subjective perception of reality, which explains the multitude of critical reflections on the concept (Ion & Criveanu, 2016). Thus, scholars opined that performance could be referred to simply in terms of the achievement of quantified objectives. More so, performance is not only a matter of what people achieve rather how the objectives are achieved; hence a high performance result comes from appropriate behavior and the effective use of required knowledge, skills, and competencies (Apata & Yusuf, 2022; Karitu & Muathe, 2023; Peng et al., 2022; Silva & Morello, 2021). Narrowing down to cooperative society performance, International Cooperative Alliance (ICA) (2023) defined cooperative as an autonomous association of persons unified voluntarily to meet their common economic, social and cultural needs through a jointly-owned and democratically controlled enterprise. It is a business voluntarily owned and controlled by its member patrons and operates for them and by them on a non-profit basis. It is also a business enterprise that aims at complete identity of the component factors of ownership control and use of services (International Cooperative Alliance, 2022). Measuring of the performance of a business entity, like cooperatives is very important. With the performance measurement of cooperatives, managers are able to know the effectiveness and efficiency of revenue cost, asset use, an operational process of the cooperatives management organization (Ion & Criveanu, 2016). Measuring of the cooperative performance is able to help decision-making about the educational needs of the human resource training, planning, and control in the process of the further cooperative management (Silva & Morello, 2021).

Social Capital

Social capital is a kind of scarce social resource existing in the network of entrepreneur relations. The existence of social capital is not static but has a cumulative effect (Li et al., 2020; Moran, 2015). Social capital can be thought of as the glue that holds society together, and it plays a crucial role in various aspects of social and economic life (Cardon et al., 2016). According to Rodrigo-Alarcón et al. (2018), social capital is seen as the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit. Dana (2019) defines Social capital as the features of an organization like networks, norms, and trust, which can be increased the efficiency of society (Baidoo, 2020). Social capital can be divided into homogeneous social capital and heterogeneous social capital. Both types of social capital can improve the improvement of entrepreneurial performance (Cardon et al., 2013). Entrepreneurs' personal capital is especially important for the survival and development of enterprises (Rahayu et al., 2022). Entrepreneurs should actively cultivate social capital, obtain scarce resources through social network, and further improve the entrepreneurial performance of enterprises (Ngoma et al., 2021). For example, research has shown that social networks can provide social entrepreneurs with access to resources such as funding, expertise, and partnerships. Additionally, social norms and trust can facilitate the adoption of new ideas and innovations, which is essential for social entrepreneurship. Social capital facilitates in discovering opportunities to identify, collect and allocate internal scarce resource of organisations. In this study, social capital refers to the social networks, norms, and trust that facilitate coordination and cooperation among individuals and groups (Baidoo, 2020; Ngoma et al., 2021).

Technological Environment

Technological environment refers to the method of converting resources into finished products and services by using new machines (Mallimguh et al., 2020). The technology, which is applied within an organization, comes from the general environment. It includes inventions and improvements of existing methods, machines, and materials. This could mean the vast storage of organized knowledge of doing things mechanically rather than manually (Das et al., 2020; Hussein et al., 2017). The result of technological influence is on the methods of work, design of production as well as machine and improved services. Technology is understood as the systematic application of scientific or other organized knowledge to practical tasks. Technology changes fast hence to keep pace with it because businessmen should be ever alert to adopt technology change in their business. The technological environment has an impact on the two decisions taken by SMEs (Bagheri et al., 2019; Das et al., 2020; Mallimguh et al., 2020).

Technology forces refer to the rate of scientific change and the fastest growth of technology that have potentially wide-ranging effects on society (Bagheri et al., 2019). Small Scale Entrepreneurs find it difficult to gain access to 2anew technologies, which limits innovation and SMEs' competitiveness (Kayanula & Quartey, 2000). Technology factors have rendered some SMEs not competitive and not able to meet the needs of customers. However, entrepreneurs in Small and Medium Scale industry need to recognize the need for technological change and the need to go with the flow to have a competitive advantage. Decisions to improve change or implement new technology processes must be made to meet customer wants and needs. Information Technology has been identified as a major player in the innovation and competitiveness of SMEs, but according to European Union (EU), the full potential of IT will be harnessed if the labor force is equipped with the right skills and has access to high-tech infrastructure. However, in the case of Nigeria, some SMEs lack physical telecommunication infrastructure and high-speed internet to compete globally (Chege & Wang, 2020; Dzisi et al., 2014).

Social Capital, Cooperative Societies Performance and Technological Environment

The findings of Kaua and Namusonge (2015) enumerated a positive correlation between social capital and firm performance with the mediation of knowledge transfer and technology. Likewise, Kithusi (2015), in a related study, investigated the role of a firm's resources on its performance and revealed that a direct connection between social capital and the venture performance moderated by technological innovation; resources possessed by an enterprise have a substantial effect on the firm's performance. Further, Iturrioz, Aragón, and Narvaiza (2015) revealed that the main stimulators for developing invention nets were dependent on mediators and social capital systematic dynamics. In another study, Akintimehin et al. (2019) found that internal social capital had a noteworthy effect on the venture's performance, while external social capital was found to have no noteworthy effect on enterprise performance. The study also found that social capital and firm performance were moderated by technology.

In furtherance to the significant moderating effect of technological environment between social ventures and performance, the study of Naser et al. (2009) asserted that, for social ventures to flourish, there is a need for a conducive business environment and regulations, improved technology, satisfactory essential framework administrations, access to short and long haul financing at sensible rates, valuation and funding, counseling help, and learning about business opportunities. The study of Awe (2012) and Mallimguh et al. (2020) identified technological

innovation, consumer confidence, country economic state, environmental impact, government intervention, currency strength, and interest rate business environment as a critical success factors for small business performance. The study of Adidu and Olanye (2006) established a significant relationship between social learning and technological environment and asserted that small business around the world operates within a business environment that embraces technological innovation. In a related study the findings of Ukaegbu, (2004) stated that the small business owners must interact with those forces that influence their business firms in order for their business to perform and be successful.

Moreover, scholars such as Kraus et al. (2012) and Palazzeschi et al. (2018) have reported that, in turbulent environments, companies do innovate and perform better, since uncertain business environments act as a catalyst that pushes companies to engage more in innovation. However, other scholars (Agyapong et al. 2021; Taghizadeh et al. 2021) have reached opposing conclusions, stating that an unstable business environment is an obstacle that deters company innovativeness. These studies (Agyapong et al. 2021; Taghizadeh et al. 2021) revealed that technological environment has no significant moderating effect between entrepreneurship and performance. As emphasised by Skrok (2019), social capital, together with human capital and technology, constitute the basis of the knowledge economy, which is the best environment for economic growth and development. Their research empirically confirms the relationship between social capital and productivity.

Similarly, Nguyen and Ha (2020) demonstrated that social capital is positively correlated with company success. Also, the studies by Jalles and Tevares (2015), which analysed the relationship between productivity and social capital in 59 economies in the years 1970–2007, confirm the positive influence of social capital on productivity. Their research also shows that the positive effect of social capital is more important in richer countries. Social capital exerts direct positive impacts on productivity; however, their effects are geographically bounded, and negative spatial spillovers offset direct outcomes role-played spatial distribution of social and human capital, and their geographical externalities are deemed crucial in explaining lower levels of productivity. Likewise, Onoriode (2022) revealed a significant influence and positive relationship between social capital and financial performance of listed manufacturing companies. In the same vein, Lambe et al. (2021) showed that social capital significantly influenced financial performance.

Theoretical Framework

Resource Based View (RBV) was propounded by Penrose in 1959, articulated into a coherent theory by Wernerfelt (1984), and popularized by Barney (1991). The theory states that the organizational resources and capabilities that are rare, valuable, non-substitutable, and imperfectly imitable form the basis for a firm's sustained competitive advantage. RBV suggests that the firm can secure a sustained competitive advantage by facilitating the development of competencies that are firm-specific, produce complex social relationships, are embedded in a firm's history and culture, and generate tacit organizational knowledge (Lee, 2016). The resource-based view of the firm has long provided a core theoretical rationale for Human resources' potential role as a strategic asset in the firm (Wright & McMahan, 1992). The theory relies on two main assumptions; firstly, it is assumed that firms achieve competitive advantage by using their different bundles of resources; secondly, it is assumed that resources that are difficult to obtain by competitors because of the exorbitant cost of developing, acquiring or using them, also create a competitive advantage (Bowen & Ostroff, 2004). Supporting this theory, the RBV pays attention to the role of resources

and skills in determining the boundaries of the firm's activities, both at the corporate and business strategy levels, and how the firm can achieve performance and competitive advantage (Grant, 2001). According to Grant (2001), the resources and capabilities of the firm form the foundation of the firm's long-term strategy because they provide the basic direction for a strategy and constitute the primary source of profits for the firm. The Resource-Based View (RBV) theory is highly relevant in studying the effect of social capital on the performance of cooperative societies. The RBV theory focuses on the internal resources and capabilities of an organization, emphasizing that sustainable competitive advantage arises from unique and valuable resources that are difficult to imitate or substitute.

3.0 MATERIALS AND METHODS

The cross-sectional survey research design was utilized to retrieve information from participants by gathering data from a specific sample of a given population, through personal or impersonal means, to study its characteristics (Zikmund et al., 2015). This research design was applied in consonance with previous studies such as Zhou (2017) on the relationship between social capital and enterprise performance in the cultural and performing arts industry: the mediating role of business model. Ozigi (2018) worked on social capital and financial performance of small and medium scale enterprises. While Lamari (2022) studied, does social capital determine innovation? to what extent? Also, Sani et al. (2019) investigated whether social capital and small and medium enterprise factors influence the performance of small businesses. The population for this study comprised of 1,590 executives of cooperative societies operating in Ogun State, Nigeria. Based on the Ogun State Cooperative Federation (OSCFL, 2022) report, there are currently 1,590 cooperative societies operating in Ogun State, Nigeria. When disaggregated per senatorial district, Ogun Central Senatorial District houses 647 cooperative societies, Ogun East Senatorial District houses 424 cooperative societies, and Ogun West Senatorial District houses 519 cooperative societies (Ogun State Cooperative Federation Limited, 2022).

The study applied the Raosoft sample size determination method at 95 percent confidence level and 5percent margin error to determine the sample size. A sample size of four hundred and three (403) was utilized. The sample size included an additional 30% sample size taking into knowledge non-response occurrence possibilities (Zikmund, et al., 2015). The stratified random sampling technique was adopted, while a well-structured questionnaire was applied as the research instrument with question items adapted from other past studies. The administration of the questionnaire was carried out both in person and by using trained research assistants. A pilot test was conducted likewise the validity and reliability test were established to ascertain the suitability of the research instrument to measure what it was projected to measure and taking into knowledge how well the concepts were defined by the measure(s). The validated reliability result through Cronbach's alpha coefficients from the internal consistency test showed; Cooperative Societies Performance (α) = 0.867, Social Capital (α) = 0.876, and Technological Environment (α) = 0.848. The hierarchical regression analysis was used to study the moderating effect based on collated and treated primary data collected from the sampled cooperative societies in Ogun State, Nigeria. Afterwards, the regression equation was established based on the independent variable and moderating variable. Therefore, the model was formulated as such:

$Y = f(X, Z)^n$ that is:

$Y = \mathcal{R}_0 + \mathcal{R}_1 SC + \mathcal{R}_2 zTEt + \varepsilon_i$ …….. eq. 1

Where: Y = Cooperative Societies Performance (CCP)

X = Social Capital (SC)

Z = Technological Environment (TEt)

The functional relationship of the model is presented as:

Hence: CCP = $\mathcal{R}_0$ + $\mathcal{R}_1$SC + $\mathcal{R}_2$Zsc*TEt + ε_i ……equ. 2

Where:

$\mathcal{R}_0$ = Constant term

$\mathcal{R}_{0\,1}$ = Coefficient of social capital

$\mathcal{R}_{0\,2}$ = Coefficient of Technological environment

ε_i = error or stochastic terms

The study *a priori* expectation is that a positive and significant influence will be observed from technological environment as the moderator on the effect of social capital on cooperative societies performance. Moreover, since the information obtained from participants are core in conducting this study, the paper applied strict adhered to ethics of research concerning anonymity, respect for human dignity, confidentiality, and non-falsification of data, although non-data manipulation was implemented in the data collection, collation, and treatment procedure. In addition, materials obtained from other previous studies were duly credited.

4.0 FINDINGS

The hypothesis was tested using hierarchical regression analysis to investigate whether technological environment do not significantly moderate the effect of social capital on and cooperative societies performance in Ogun State Nigeria. The analysis involved entering variables in steps. In the first step, performance was regressed on social entrepreneurship. In the second step, the moderating variable, technological environment was entered in the model. In the third step, the interaction term was added to the model. The regression outputs were checked to determine if there was a significant change in *R* squared which could be attributed to the interaction effect of social capital and technological environment. The results of the analysis were presented in Tables 1 - 3.

Table 1: Summary of Hierarchical Regression Analysis for Effect of Social Capital on Cooperative Societies Performance as Moderated by Technological Environment

Model Summary									
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**	**Change Statistics**				
					R Square Change	**F Change**	**df1**	**df2**	**Sig. F Change**
1	0.939[a]	0.882	0.882	6.37779	0.882	2691.387	1	359	0.000
2	0.939[b]	0.882	0.882	6.38479	0.000	0.213	1	358	0.644
3	0.940[c]	0.883	0.882	6.37482	0.001	2.120	1	357	0.146

a. Predictors: (Constant), Social Capital
b. Predictors: (Constant), Social Capital, Technological Environment
c. Predictors: (Constant), Social Capital, Technological Environment, SoCap_TEt

Source: Researcher's Computation (2024)

Table 2: ANOVA of Hierarchical Regression Analysis for Effect of Social Capital on Cooperative Societies Performance as Moderated by Technological Environment

ANOVA[a]						
Model		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
1	Regression	109475.304	1	109475.304	2691.387	0.000[b]
	Residual	14602.746	359	40.676		
	Total	124078.050	360			
2	Regression	109484.007	2	54742.004	1342.852	0.000[c]
	Residual	14594.043	358	40.765		
	Total	124078.050	360			
3	Regression	109570.180	3	36523.393	898.743	0.000[d]
	Residual	14507.870	357	40.638		
	Total	124078.050	360			

a. Dependent Variable: Cooperative Society Performance
b. Predictors: (Constant), Social Capital
c. Predictors: (Constant), Social Capital, Technological Environment
d. Predictors: (Constant), Social Capital, Technological Environment, SoCap_TEt

Source: Researcher's Computation (2024)

Table 3: Coefficient of Hierarchical Regression Analysis for Effect of Social Capital on Cooperative Societies Performance as Moderated by Technological Environment

Coefficients[a]						
Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**T**	**Sig.**
		B	**Std. Error**	**Beta**		
1	(Constant)	-3.463	1.671		-2.072	0.039
	Social Capital	1.354	0.026	0.939	51.879	0.000
2	(Constant)	-4.954	3.636		-1.363	0.174
	Social Capital	1.354	0.026	0.939	51.742	0.000
	Technological Environment	0.068	0.147	0.008	0.462	0.644
3	(Constant)	-27.530	15.923		-1.729	0.085
	Social Capital	1.720	0.253	1.193	6.808	0.000
	Technological Environment	1.081	0.711	0.133	1.520	0.129
	SoCap_TEt	-0.016	0.011	-0.289	-1.456	0.146

a. Dependent Variable: Cooperative Society Performance

Source: Researcher's Computation (2024)

Interpretation

In step one, social capital was regressed on cooperative society performance in Nigeria. The findings in Table 1 revealed the result of hierarchical regression analysis for Model 1 when only Social capital and cooperative society performance in Ogun State, Nigeria. The equation model (R = 0.939, R^2= 0.882 Adjusted R^2 = 0.882, p = 0.000<0.05, $R^2\Delta$ = 0.882) indicated that social capital accounts for 93.9% of the variability in cooperative society performance. Furthermore, Table 1 shows beta coefficient, β, as 1.354, $p < 0.05$ when social capital is in the model. These results indicated that for every unit increase in social capital, cooperative society performance increased by 1.354. The overall model was also significant (F (1,359) = 2691.387, $p < 0.05$) as evident from Table 2.

The introduction of the moderator (technological environment) in Model 2 did not significantly improve the effect of social capital on cooperative societies performance in Ogun State, Nigeria (R= 0.939, R^2 = 0.882, Adjusted R^2 = 0.882, p = 0.236 > 0.05, $R^2\Delta$ = 0.000). This means that social capital and technological environment explained about 93.9% of the variation in performance of the selected cooperative societies remaining the same 92.5% that occurs when only social capital were regressed against cooperative societies performance. The F value is statistically significant (F (2, 358) = 1342.852, $p < 0.05$) that the influence of the independent variable and the moderator were significant in the model as seen from Table 2. In addition, Table 3 shows the beta coefficients of social capital (β = 1.354, $p < 0.05$); that is for every unit increase in social capital, cooperative societies performance increases by 1.354. Resulting in change in the technological environment increases the performance of cooperative societies.

Model 3 of the hierarchical regression analysis showed how the moderating effect of technological environment affected the relationship between social capital and performance of the cooperative societies in Ogun State, Nigeria. The results in Table 1 (Model 3) provided values of co-efficient

of multiple correlation, R = 0.940 and an adjustment co-efficient of determination, R^2 = 0.883 when social capital and performance of the cooperative societies was moderated by technological environment showing no improvement and the same with the R value of 0.940 and an adjusted R^2 of 0.882 for the model 2. The correlation co-efficient revealed a very strong relationship exists between the independent variable, moderating variable, interaction variable and the dependent variable. Furthermore, the adjusted R^2 indicates that about 88.3% variance in cooperative societies performance jointly explained by the social capital, technological environment, and the interaction term (social capital*technological environment), while other factors not studied in this research work contributes the remaining 11.7%.

Model 3 further showed that no changes occurred when the interaction term was introduced. Social capital, technological environment and the interaction term were entered in the regression model. The results under change statistics, reveal that the R^2 change was 0.000 ($R^2\Delta$ = 0.001), R^{-2} was 0.883 when the interaction variable (social capital*technological environment) was added. The change was statistically insignificant at p=0.146 (p>0.05). The results showed a statistically insignificant relationship between social capital, technological environment, and the interaction term. Table 2 revealed the F statistics changed from 1342.85 2to 898.743($F\Delta$ = 2.121) showing an increase when interaction term was added. The F ratio confirmed that the regression of social capital, technological environment, and the interaction variable on performance of the selected cooperative societies was statistically insignificant.

The results in Model 1 Table 1 (for step one) showed statistically significant regression coefficients for social capital (β=1.354 p<0.05) indicating that there is a linear dependence of performance of selected cooperative societies on social capital. In Model 2, social capital was statistically significant (β=1.354 p<0.05) while technological environment was statistically insignificant (β =0.068, p>0.05) and had a positive effect on the performance of selected cooperative societies. In Model 3, technological environment (β = 1.018, p > 0.05), was statistically insignificant and interaction effect (β = -.016, p > 0.05) has a negative statistically insignificant. Specifically, when the interaction term was introduced the beta coefficient, β was -0.016 implying that for every unit change in interaction term, performance of the selected cooperative societies decreases by -.016. Furthermore, the effect was statistically insignificant. The results suggest that technological environment had a negative and insignificant moderating effect on the relationship between social capital and performance of the selected cooperative societies in Ogun State, Nigeria. The regression equation from the results is stated as follows:

CSP = -3.463 + 1.354SC + 1.018TEt -0.016 (SC*TEt) ----------Eqn. 1

Where:

CSP = Cooperative Society Performance

SC = Social Capital

TEt = Technological Environment

SC*TEt = Interaction Term

From equation 1, the interaction of social capital and technological environment indicated that technological environment has a negative and insignificant effect on the relationship between social capital and cooperative society performances in Ogun State, Nigeria. Based on this finding

this paper's null hypothesis which states that the effect of social capital on cooperative societies performance is not significantly moderated by technological environment was not rejected.

Discussion of Findings

The results of the hierarchical regression confirmed that social capital effect on cooperative societies performance not significantly moderated by technological environment in Ogun State Nigeria. Moreover, the effect was also negative. This paper's result strengthens the position of the reports by African Union Inter-Africa Information System (2022) and African Union Commission on Cooperatives (2019) that underdeveloped supportive infrastructure constitutes a major performance barrier as, over 90% of surveyed cooperatives across 16 African nations (Nigeria inclusive) lack access to stable electricity grids while over 65% continue relying fully on paper-based record keeping per African Union analysis, creating severe technology limitations. Moreover, the result is in consonance with other scholars (Agyapong et al., 2021; Taghizadeh et al., 2021) who found that an unstable business environment is an obstacle that deters company innovativeness. These studies (Agyapong et al. 2021; Taghizadeh et al. 2021) revealed that technological environment has no significant moderating effect between entrepreneurship, capital and performance.

Conversely, this paper's result negates the finding of Kaua and Namusonge (2015) who reported a positive correlation between social capital and firm performance with the mediation of knowledge transfer and technology. Likewise, Kithusi (2015) study revealed that a direct connection between social capital and the venture performance moderated by technological innovation; resources possessed by an enterprise have a substantial effect on the firm's performance. Further, Iturrioz et al. (2015) revealed that the main stimulators for developing invention nets were dependent on mediators and social capital systematic dynamics. Supporting previous works, Akintimehin et al. (2019) found that internal social capital had a noteworthy effect on the venture's performance, while external social capital was found to have no noteworthy effect on enterprise performance. The study also found that social capital and firm performance were moderated by technology. Further negating other studies based on this paper's results that no significant moderating effect of technological environment between social ventures and performance was established, the study of Naser et al. (2009) asserted that, for social ventures to flourish, there is a need for a conducive business environment and regulations, improved technology, satisfactory essential framework administrations, access to short and long haul financing at sensible rates, valuation and funding, counseling help, and learning about business opportunities.

Further, the study of Awe (2012) and Mallimguh et al. (2020) identified technological innovation, consumer confidence, country economic state, environmental impact, government intervention, currency strength, and interest rate business environment as a critical success factors for small business performance. The study of Adidu and Olanye (2006) established a significant relationship between social learning and technological environment and asserted that small business around the world operates within a business environment that embraces technological innovation. In a related study the findings of Ukaegbu, (2004) stated that the small business owners must interact with those forces that influence their business firms in order for their business to perform and be successful. As emphasized by Skrok (2019), social capital, together with human capital and technology, constitute the basis of the knowledge economy, which is the best environment for economic growth and development. Their research empirically confirms the relationship between

social capital and productivity. Moreover, Palazzeschi et al. (2018) have reported that, in turbulent environments, companies do innovate and perform better, since uncertain business environments act as a catalyst that pushes companies to engage more in innovation. Similarly, Nguyen and Ha (2020) demonstrated that social capital is positively correlated with company success. Likewise, Onoriode (2022) revealed a significant influence and positive relationship between social capital and financial performance of listed manufacturing companies. In the same vein, Lambe et al. (2021) showed that social capital significantly influenced financial performance.

The findings of this research work give credence and support to the theoretical assumptions of the RBV theory. The theory states that the organizational resources and capabilities that are rare, valuable, non-substitutable, and imperfectly imitable form the basis for a firm's sustained competitive advantage. RBV suggests that the firm can secure a sustained competitive advantage by facilitating the development of competencies that are firm-specific, produce complex social relationships, are embedded in a firm's history and culture, and generate tacit organizational knowledge (Lee, 2016). The resource-based view of the firm has long provided a core theoretical rationale for human resources' potential role as a strategic asset in the firm (Wright & McMahan, 1992). Based on these discussions and interaction term results, the null hypothesis which states that social capital effect on cooperative society's performance in Ogun State Nigeria is not significantly moderated by technological environment was not rejected.

5.0 CONCLUSION AND RECOMMENDATIONS

The results established that based on the interaction term result from the hierarchical regression analysis, the effect of social capital on cooperative societies' performance was negative and insignificantly moderated by technological environment in Ogun State, Nigeria. This paper's result strengthens the position of the reports by the African Union Inter-Africa Information System (2022) and African Union Commission on Cooperatives (2019) that underdeveloped supportive infrastructure constitutes a core performance barrier as, over 90% of surveyed cooperatives across 16 African nations (Nigeria inclusive) lack access to stable electricity grids while over 65% continue relying totally on paper-based record keeping per African Union analysis, creating severe technology limitations. So, based on the leading question that necessitated this study, it is statistically established that the technological environment has no interactions with social capital and cooperative society's performance in Nigeria since the results were negative and insignificant. Therefore, the study recommended that the management of cooperative societies in Nigeria should continuously appraise their organizational performance, identify vulnerable skill areas and technical abilities, and implement best practices to sustain and increase their drive for performance. Doing this will attract and retain customers, increase depositors' confidence, and help to boost their investment morale. Moreover, since statistically, technological environment had a negative and insignificant interaction, the need for executives of cooperative societies in Nigeria to invest in technology in their strategic plans is germane because a business lagging in technology in this present era and business climate will gradually but surely not survive. Future works should extend to other States in Nigeria and other countries to re-emphasize the importance of introducing technology into the business environment. Also, further research should use qualitative methods like interviews and case study garners more insights into how firms leverage social capital in business and the challenges they face.

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