

# Innovations

## Social Capital and Performance of Manufacturing Firms in South-East Nigeria

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**Abstract:** *This study investigated the interaction between on social capital and performance of manufacturing firms in South-east Nigeria. Social capital is critical to improving the performance of manufacturing firms. The specific objectives of the study were to investigate the effect of social interaction on operational efficiency, ascertain the effect of central network position on profitability, and determine the effect of network size on market share of manufacturing firms in South East Nigeria. The study employed a survey research design. The sample size of 309 was randomly selected, and the Kaiser-Meyer-Olkin (KMO) values ranging from 0.620 to 0.949; showing that all constructs have excellent sampling adequacy. A multi-stage sampling technique was employed to ensure a comprehensive representation. The research instrument was validated using content validity. The study adopted Cronbach's coefficient alpha for establishing the reliability of the constructs. Both descriptive and inferential statistics were utilized for data analysis. The study employed a simple regression to test formulated hypotheses. Findings revealed that social interaction had a significant positive effect on operational efficiency of manufacturing firms (given  $\beta = 0.922205$ ;  $p$ -value  $< 0.01$ ), central network position had a significant positive effect on profitability of manufacturing firms (given  $\beta = 0.885857$ ;  $p$ -value  $< 0.01$ ), and network size had a significant positive effect on market share of manufacturing firms in South East Nigeria (given  $\beta = 0.931183$ ;  $p$ -value  $< 0.01$ ). The study strongly supports the notion that social capital plays a crucial role in enhancing the performance of manufacturing firms in South East Nigeria. The study recommended that firms should consider implementing strategies that promote social interaction like team-building activities, and open communication channels, as these practices will create a more cohesive work environment that can enhance overall operational efficiency.*

**Keywords:** Social Interaction, Operational Efficiency, Central Network Position, Profitability, Social Capital, Performance

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## **Introduction**

Social capital is a critical component in the global industrial sector, as it influences sector dynamics, shapes corporate operations, and establishes connections among various stakeholders. Social capital is a critical factor in the formation of relationships and interactions among a variety of stakeholders within the industry, which in turn affects the global industrial sector and corporate operations (Al-Tabbaa&Ankrah, 2016). Mutual trust, shared values, and collaborative norms among individuals and organisations are the foundations of networks of relationships (Kanini&Muathe, 2019).

Social capital in the global manufacturing sector transcends ordinary interpersonal connections to influence a variety of industry components, particularly in the context of intricate supply chains. In order to cultivate trust among stakeholders from various nations, these supply chains depend on robust relationships (King et al., 2019; Saffer, 2019; Tseng et al., 2022). Building and maintaining trust through social capital is critical for resilient and efficient supply chains because it facilitates collaboration, reduces transaction costs, and improves information exchange, thereby enabling successful navigation of the complexities of a globalized manufacturing sector.

Innovation is a critical factor in Africa's manufacturing sector advancement, with social capital serving as a catalyst for a transformative environment. Social capital enables manufacturers to effectively navigate emergent technologies and market trends by facilitating collaborative initiatives that drive innovation within the sector (King et al., 2019; Rust et al., 2022). This synergy between innovation and social capital fosters collaborative research and development endeavours, as manufacturers within trusted networks are more likely to consolidate resources and knowledge for collective advancements (Chen et al., 2018).

Social capital dynamics are driving a substantial transformation in Nigeria's manufacturing sector. The establishment of robust networks that connect manufacturers, suppliers, and stakeholders is fostering a collaborative environment that is based on shared objectives and trust (James, 2021). This environment expedites the adoption of cutting-edge technologies and best practices while also promoting the exchange of knowledge within the industry (Ogunjemilua et al., 2020; Zulu-Chisanga et al., 2023). Manufacturing firms in Nigeria are more capable of adapting to market changes, technological disruptions, and improving the efficacy of their supply chain networks by utilising social capital (Alonso-Muñoz et al., 2021; Polyviou et al., 2020).

Manufacturing companies in South East Nigeria are strategically employing social capital to enhance the efficacy of their supply chain networks. Factors such as network size, position, and tie strength influence the resilience and effectiveness of these supply chains through social capital frameworks (Analia et al., 2020; Mohammed, 2023). Strategic positioning within networks allows firms to serve as central centres for coordination and communication, thereby improving the flow of information and decision-making, while expansive networks offer access to a variety of resources and collaborative opportunities. Strong connections within social networks further enhance trust, reliability, and mutual cooperation among partners, thereby enhancing supply chain capabilities (Baron & Dimitri, 2019).

The integration of social capital into supply chain dynamics in South East Nigeria not only improves operational efficiency but also affects firm performance across a variety of dimensions. Social capital is a valuable asset for organisations that seek to flourish in a challenging environment, as it impacts organisational resilience, overall performance, and functioning (Bakker et al., 2019; Herbane, 2018). Empirical evidence indicates that networks have a substantial impact on firm performance, underscoring the necessity of cultivating extensive networks to enhance the performance of manufacturing firms (Ferrer et al., 2013).

By cultivating a cohesive work environment that prioritises collaboration, trust, and transparent communication, the dynamics of social interaction within manufacturing organisations can have a substantial influence on performance (Eliacin et al., 2018). The role of trust in the establishment of collaborative environments that enhance information flow, mitigate risks, and promote joint problem-solving further underscores this influence (Pillay, 2018; Wang et al., 2020). Furthermore, a firm's network position within its ecosystem can influence its operational outcomes by facilitating effective communication, cooperation, and decision-making (Shi et al., 2019). In addition to facilitating communication, knowledge sharing, and trust among stakeholders, strong ties within social networks also play a pivotal role in shaping collaborative landscapes within manufacturing firms (Kim & Choi, 2015; Liu et al., 2017).

The dimensions of social capital, such as network size, social interaction, trust, network position, tie strength, and embedded resources, significantly influence a firm's performance in the manufacturing sector (Bakker et al., 2019). However, though there are several dimensions of Social Capital, we only investigated how three of these dimensions of Social Capital namely social interaction, central network position, and network size interact with three dimensions of

performance of manufacturing namely operational efficiency, profitability and market share. By investigating these dimensions, the study aims to generate insights into the ways in which social capital affects the overall dynamics, performance, and success of organisations in the manufacturing sector.

Thus, this study aimed to explore the relationship between social capital and the performance of manufacturing firms in South East Nigeria, with a focus on understanding the broader implications. Hence, we hypothesize as follows:

- i. Hypothesis 1: Social interaction has significant effect on operational efficiency of manufacturing firms in South East Nigeria.
- ii. Hypothesis 2: Central network position has significant effect on profitability of manufacturing firms.
- iii. Hypothesis 1: Network size has significant effect on market share of manufacturing firms in South East Nigeria.

## **Literature Review**

### **Social Capital**

The present study examines two critical variables in the manufacturing sector: the independent variable of social capital and the dependent variable of performance. A body of research (Bakker et al., 2019; Herbane, 2018; King et al., 2019; Rust et al., 2022) has emphasised the significant attention that these variables have garnered in contemporary manufacturing discourse, emphasising the dynamic interplay between the social environment and individuals or organisations. Bakker et al. (2019) have identified social capital as a catalyst for organisational success, enabling opportunities for discovery, evaluation, and exploitation.

Social capital is the aggregate of actual and prospective resources within a network of relationships that facilitate cooperation for mutual benefit (Bondeli et al., 2018). This concept encompasses relationships, norms, and trust. It is a representation of the benevolence that results from relationships, enabling individuals or groups to obtain resources and benefits based on their position in social networks (Analia et al., 2020). This network of relationships is essential for the performance of manufacturing firms, as it provides access to information, social support, and cooperation (Akintimehin et al., 2019).

Scholars have acknowledged the advantages of social capital within a network of social relationships, and a variety of perspectives contributes to the comprehension of this concept. It provides both tangible and intangible

advantages, including career support, resource accessibility, and information dissemination (Ghahtarani et al., 2019; Bondeli et al., 2018). According to Kim and Shim (2018) and Yeşil and Doğan (2019), social capital is essential for the promotion of innovation, knowledge exchange, and information flow both within and outside of organisations. Social capital enhances organisational competitiveness and success by enabling continuous learning, adaptability, and problem-solving in manufacturing processes.

In the business environment, social interaction is characterised by the development of patterns of cooperation, trust, and reciprocity through repeated social interactions. This is especially important in manufacturing firms, where the relationships among employees, suppliers, and stakeholders are of paramount importance (Ali & Yousuf, 2019; Miković et al., 2020). It involves the accumulation and exchange of social capital, such as trust, shared norms, and relationships, which facilitates cooperation for mutual benefit (Ghahtarani et al., 2019). Social interaction in manufacturing contexts is characterised by the exchange of knowledge, information, and resources among individuals and groups, which contributes to the development of social capital (Lee & Ha, 2018).

The dynamics of social interaction significantly influence the development and utilisation of social capital in manufacturing firms. Establishing close relationships among employees at all organisational levels fosters a cohesive work environment by bonding social capital. This facilitates collaboration, communication, and problem-solving, resulting in increased efficiency and productivity (Horng & Wu, 2019; Singh et al., 2020). Additionally, positive interactions with external stakeholders are essential for the development of bridging social capital, which is essential for market adaptation, resource exchange, and innovation (Eiteneyer et al., 2019).

Interactions with formal institutions, such as regulatory bodies and industry associations, offer access to valuable resources and opportunities, which contribute to the development of linking social capital through effective communication and collaboration among employees (Garcia & Ramirez, 2015; Khoshmaram et al., 2018). Kim and Shim (2018) and Yeşil and Doğan (2019) have both observed that the character of social interactions has a significant impact on the organisational culture. A positive and inclusive culture promotes social capital by promoting knowledge sharing, collaboration, and collective learning. Transparent communication is essential for the preservation of trust and the successful navigation of disruptions during periods of change, underscoring the

significance of social interaction in the development of organisational adaptability and resilience.

Kim et al. (2011) and Shi, Yang, & Li (2019) have identified central network position as a critical structural metric for evaluating an individual's significance within a network, which involves evaluating their access to information, resources, and influence. Individuals in central network positions are critical conduits for information exchange, which facilitates efficient access to resources and decision-making processes (Perren&Kozinets, 2018; Sah et al., 2018). In manufacturing firms, their influence in decision-making and coordination fosters trust and relationship building, which are essential for a positive work environment, thereby enhancing innovation and problem-solving (Wang et al., 2020; Graf &Menter, 2022).

Network size is a critical factor that shapes the social capital landscape of manufacturing firms, affecting resource access, information flow, and opportunities (Rodway et al., 2021). Internal networks among employees and external connections with suppliers, consumers, and partners contribute to the bonding, bridging, and linking of social capital within the organisation (Bondeli et al., 2018; Kanini&Muathe, 2019). A more extensive internal network facilitates communication, knowledge-sharing, and teamwork, whereas an extensive external network offers access to a wide range of skills, information, and support that are essential for market adaptation, innovation, and decision-making (Alinaghian&Razmdoost, 2018).

### **Performance**

Most people define "performance" as operational effectiveness, which includes productivity, efficiency, use of resources, and reaching objectives (Cascio, 2015). According to Al-Tit (2017), performance is the achievement of predefined goals and objectives within a given time period. This definition is consistent with the notion that performance is the realisation of expected goals inside an organisation within a predetermined time period. Enterprise risk management, organisational design, innovation, leadership style, and management techniques are some of the variables that affect success in the manufacturing industry (Al-Tit, 2017). These elements highlight how difficult it is to quantify performance, which has sparked further study in the social and behavioral sciences literature.

It is critical to distinguish between industry-based and firm-based performance assessments, since industry performance provides an overall view of the industry by incorporating both external and internal aspects (Kianian et al.,

2018). The relationship between industry performance, economic development, and national growth makes it significant. Conformity to quality management guidelines and regular delivery of high-quality goods are indicators of a manufacturing company's performance (Anggadini et al., 2021; Nguyen et al., 2018). As a result, evaluating an industry's performance necessitates a holistic approach that considers all of the underlying factors that shaped it.

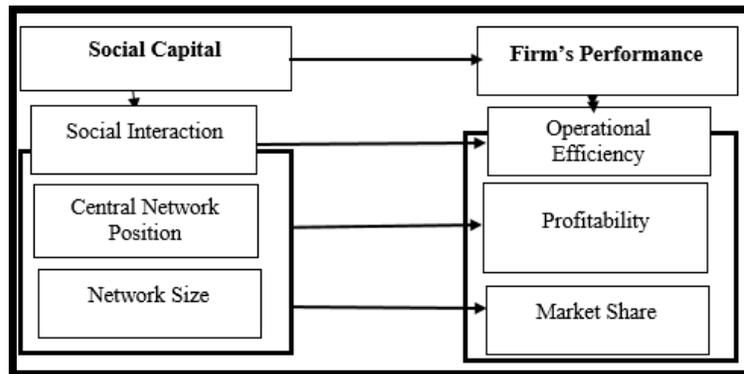
A thorough grasp of the many facets that contribute to organisational success is required due to the dynamic nature of the business environment and the constantly changing conceptions of performance. The distinction between industry and enterprise viewpoints highlights the complexity of measurement, and Cascio's (2015) and Al-Tit's (2017) definitions provide fundamental insights into the concept of performance. The assessment of performance at the enterprise level encompasses both monetary and non-monetary metrics. Recent studies have investigated additional aspects like market share, profitability, innovation output, operational effectiveness, and sales. Aside from learning and development viewpoints, these enlarged criteria also include perceptions of human resources, productivity, shareholder happiness, strategy and process alignment, operational success, value creation, and corporate vision. In today's constantly changing environment, ongoing research and the adaptation of performance assessment approaches are critical for well-informed decision-making and long-term success.

In the manufacturing industry, operational efficiency pertains to the strategic management strategy that aims to improve overall performance through internal process optimisation. To increase flexibility, consistency, productivity, and cycle time, it is necessary to optimize output, cut waste, and streamline production (Habib et al., 2022). In order to offer competitive pricing to clients in a highly competitive business climate, organisations must prioritise operational efficiency (Handoyo et al., 2023). By creating the framework for responding to shifting consumer expectations and technical breakthroughs, smart manufacturing improves operational resilience (Xi et al., 2024). Manufacturing flexibility can lead to increased productivity and cost-effectiveness by facilitating quick responses to customer preferences, customisation, and effective adjustments to production processes (ElMaraghy et al., 2021). According to Battina et al. (2015) and Strange & Zucchella (2017), manufacturing flexibility can enhance productivity and reduce costs.

Businesses need to perform well in terms of profitability because it shows how well they can make money and remain solvent (Nguyen et al., 2018). As a

measure of a company's capacity to turn a profit, profitability depends on efficient cost and expense management (Selvam et al., 2016). Metrics including return on equity, return on assets, return on investment, and Tobin's Q offer insights into financial performance. Research uses both objective and subjective methods to quantify profitability (Agiomirgianakis et al., 2013; Prayanthi&Budiarmo, 2022). Metrics like gross profit margin and net profit margin demonstrate how important cost control and efficient management of production expenses are to profitability (Margaretha&Supartika, 2016).

According to Paquet-Clouston et al. (2018), market share—traditionally interpreted as the ratio of a vendor's sales to the overall sales in a market—is a crucial metric for assessing competitive position and customer demand capture. Increased market share is an indication of stronger competitiveness and customer trust, which helps businesses bargain more effectively, take advantage of economies of scale, and shape market trends (Faith &Agwu, 2018; Nenonen et al., 2019). According to Gobble (2018), market share is a performance indicator that is subject to fluctuations based on several factors, such as consumer preferences, competitive activities, and market dynamics. Gaining and retaining market share is critical for both social capital and the economy. It promotes cooperation, trust, risk management, and brand image—all of which are critical for long-term competitiveness (Baah et al.).



**Figure 1: Conceptual Framework of Social Capital and Performance**

**Source:** Researcher, (2024)

**Methodology**

**Research Design**

A survey research design was employed for data collection, utilizing a standardized instrument to gather relevant data. With this design, the researchers were able to examine cause-and-effect connections in light of the

gathered and examined data. Respondents were able to voice their opinions about the variables under investigation using this design. The survey research design gave the study a methodical and structured framework that made it possible to fully comprehend the linkages and variables at play.

**Sample Size and Sampling Technique**

The sample size of 309 was randomly selected. Table 1 provides a comprehensive overview of sampling adequacy metrics for different constructs. The majority of constructs have high sampling adequacy, as evidenced by the Kaiser-Meyer-Olkin(KMO) values, which vary from 0.620 to 0.949.

**Table 1 Sampling Adequacy**

|     | <b>KMO</b> | <b>Chi-Square</b> | <b>Total Variance Explained</b> |
|-----|------------|-------------------|---------------------------------|
| SIN | 0.907      | 2949.116          | 93.338                          |
| CNP | 0.854      | 2943.828          | 92.192                          |
| NES | 0.900      | 2479.648          | 91.257                          |
| TSH | 0.620      | 2119.480          | 87.019                          |
| TST | 0.788      | 825.675           | 81.617                          |
| OPY | 0.888      | 2764.635          | 92.773                          |
| PRF | 0.892      | 2863.743          | 91.821                          |
| MAS | 0.903      | 1486.105          | 82.431                          |
| INP | 0.810      | 3296.061          | 92.858                          |
| FNP | 0.949      | 2987.185          | 98.323                          |

**Source:** SPSS, 25

**Validity of the Research Instrument**

Content validity was used for the questionnaire's validation. The study ensured construct validity through factor analysis, providing a robust analytical framework. The choice of factor analysis stemmed from its capacity to analyse the interactions between a large numbers of items and provide an explanation of these items in terms of their shared underlying dimensions, or factors. These connections were displayed using factor loadings, where loadings higher than 0.30 were regarded as significant, loadings between 0.40 and 0.70 were regarded as very significant (Creswell, 2003). Table 2 displayed the findings of the factor loadings for every construct.

**Table 2 Validation of Instrument**

| <b>S/N</b> | <b>Question Items</b>    | <b>Factor Loading</b> | <b>AVE</b> | <b>CR</b>   |
|------------|--------------------------|-----------------------|------------|-------------|
|            | Social Interaction       |                       | 0.695209   | 0.83379194  |
| 1          | SIN1                     | 0.827                 |            |             |
| 2          | SIN2                     | 0.856                 |            |             |
| 3          | SIN3                     | 0.912                 |            |             |
| 4          | SIN4                     | 0.756                 |            |             |
| 5          | SIN5                     | 0.81                  |            |             |
|            | Central Network Position |                       | 0.640826   | 0.800516084 |
| 6          | CNP1                     | 0.772                 |            |             |
| 7          | CNP2                     | 0.863                 |            |             |
| 8          | CNP3                     | 0.754                 |            |             |
| 9          | CNP4                     | 0.819                 |            |             |
| 10         | CNP5                     | 0.79                  |            |             |
|            | Network Size             |                       | 0.741315   | 0.860996516 |
| 14         | NES1                     | 0.962                 |            |             |
| 15         | NES2                     | 0.855                 |            |             |
| 16         | NES3                     | 0.785                 |            |             |
| 17         | NES4                     | 0.8                   |            |             |
| 18         | NES5                     | 0.891                 |            |             |
|            | Tie Strength             |                       | 0.6699     | 0.81847419  |
| 19         | TSH1                     | 0.680625              |            |             |
| 20         | TSH2                     | 0.641601              |            |             |
| 21         | TSH3                     | 0.861184              |            |             |
| 22         | TSH4                     | 0.657721              |            |             |
| 23         | TSH5                     | 0.508369              |            |             |
|            | Trust                    |                       | 0.7768686  | 0.881401498 |
| 24         | TST1                     | 0.922                 |            |             |
| 25         | TST2                     | 0.941                 |            |             |
| 26         | TST3                     | 0.917                 |            |             |
| 27         | TST4                     | 0.792                 |            |             |
| 28         | TST5                     | 0.825                 |            |             |
|            | Operational Efficiency   |                       | 0.8057114  | 0.897614282 |
| 29         | OPY1                     | 0.748                 |            |             |
| 30         | OPY2                     | 0.788                 |            |             |
| 31         | OPY3                     | 0.98                  |            |             |
| 32         | OPY4                     | 0.978                 |            |             |

|    |                        |       |           |             |
|----|------------------------|-------|-----------|-------------|
| 33 | OPY5                   | 0.965 |           |             |
|    | Profitability          |       | 0.7226452 | 0.850085407 |
| 34 | PRF1                   | 0.924 |           |             |
| 35 | PRF2                   | 0.818 |           |             |
| 36 | PRF3                   | 0.837 |           |             |
| 37 | PRF4                   | 0.846 |           |             |
| 38 | PRF5                   | 0.821 |           |             |
|    | Market Share           |       | 0.7647608 | 0.874506032 |
| 39 | MAS1                   | 0.919 |           |             |
| 40 | MAS2                   | 0.827 |           |             |
| 41 | MAS3                   | 0.776 |           |             |
| 42 | MAS4                   | 0.907 |           |             |
| 43 | MAS5                   | 0.933 |           |             |
|    | Innovation Performance |       | 0.8741814 | 0.934976684 |
| 44 | INP1                   | 0.985 |           |             |
| 45 | INP2                   | 0.917 |           |             |
| 46 | INP3                   | 0.915 |           |             |
| 47 | INP4                   | 0.938 |           |             |
| 48 | INP5                   | 0.918 |           |             |
|    | Financial Performance  |       | 0.6585714 | 0.811524122 |
| 49 | FNP1                   | 0.788 |           |             |
| 50 | FNP2                   | 0.868 |           |             |
| 51 | FNP3                   | 0.763 |           |             |
| 52 | FNP4                   | 0.864 |           |             |
| 53 | FNP5                   | 0.768 |           |             |

Source: AMOS SPSS, 2024

### Reliability of the Research Instrument

In order to evaluate the constructs' reliability for internal consistency, the study used Cronbach's alpha. Internal consistency was the preferred metric because it showed how well many items measured the same variable. To evaluate internal consistency, Cronbach's coefficient alpha was calculated, this helped to assess the reliability of aggregated scale items. High reliability was generally defined as a coefficient of 0.70 or greater (Creswell, 2003). Items with Cronbach alpha coefficients of 0.70 or higher were therefore deemed appropriate for the scale used in this study.

**Table 3 Reliability Statistics of Social Capital Constructs**

| S/N | Constructs               | Cronbach's Alpha | No. of Items |
|-----|--------------------------|------------------|--------------|
| 1   | Social Interaction       | .720             | 5            |
| 2   | Central Network Position | .842             | 5            |
| 3   | Network Size             | .794             | 5            |
| 4   | Tie Strength             | .718             | 5            |
| 5   | Trust                    | .723             | 5            |

**Source:** SPSS, 25

Table 3 showed the Cronbach's Alpha of constructs. The Cronbach's Alpha of 0.720 for social interaction indicated a moderate level of internal consistency reliability. The five items measuring social interaction within this construct were reasonably correlated with each other. The Cronbach's Alpha of 0.842 for central network position also suggested a moderate level of internal consistency reliability. The five items used to measure central network position seemed to be coherent and consistent with each other in capturing central network position tendencies. With a Cronbach's Alpha of 0.794, the network size construct demonstrated a relatively high level of internal consistency reliability. The construct's five items, which assessed network size, showed strong inter-item correlations. The Cronbach's Alpha of 0.718 for tie strength indicated a good level of internal consistency reliability. The five items that made up this construct, measuring tie strength, appeared to be closely related to each other. A Cronbach's Alpha of 0.723 was found for the trust construct. This suggested a strong level of internal consistency among the five items assessing trust, indicating that these items effectively captured the concept of trust in the social capital.

**Table 4 Reliability Statistics of Performance of Manufacturing Firms**

| S/N | Constructs             | Cronbach's Alpha | No. of Items |
|-----|------------------------|------------------|--------------|
| 1   | Operational Efficiency | 0.784            | 5            |
| 2   | Profitability          | 0.715            | 5            |
| 3   | Market Share           | 0.759            | 5            |
| 4   | Innovation Performance | 0.772            | 5            |
| 5   | Financial Performance  | 0.822            | 5            |

**Source:** SPSS, 25

Table 4 shows the Cronbach's Alpha of 0.784 for operational efficiency. This suggests a good level of internal consistency among the five items that assess

operational efficiency related metrics. This indicates that the items are coherent and reliable in capturing different aspects of operational efficiency. The Cronbach's Alpha value of 0.715 for profitability indicates a reasonably strong level of internal consistency. The five items measuring profitability -related information seem to be consistent with each other in capturing profitability performance. Similarly, a Cronbach's Alpha of 0.759 for market shares suggests good internal consistency reliability. The five items assessing market share-related data appear to be consistently measuring the concept of market share. The Cronbach's Alpha value of 0.772 for innovation performance indicates a high level of internal consistency. The five items evaluating the innovation performance are coherent and reliable in capturing innovation performance. Finally, the financial performance has a Cronbach's Alpha of 0.822. This indicates excellent internal consistency reliability among the five items assessing financial performance -related information. These items appear to be highly reliable in capturing financial performance dynamics.

**Data Analyses Techniques**

In the quantitative analysis of the study, both descriptive and inferential statistics were utilized. The study employed a simple and multiple linear regression to test the formulated hypotheses. All the hypotheses were tested at a 5% level of significance with the help of *EVIEW 12*. The hypotheses testing was guided by regression models. The models according to the objectives were specified thus:

$$\begin{aligned}
 PM &= \beta_0 + \beta_1 SC + \varepsilon \dots\dots\dots 1 \\
 OPY &= \beta_0 + \beta_1 SIN + \varepsilon \dots\dots\dots 2 \\
 PRF &= \beta_0 + \beta_1 CNP + \varepsilon \dots\dots\dots 3 \\
 MKS &= \beta_0 + \beta_1 NES + \varepsilon \dots\dots\dots 4
 \end{aligned}$$

Where:

- SIN= Social Interaction
- CNP= Central Network Position
- NES= Network Size
- OPY= Operational Efficiency
- PRF= Profitability
- MAS= Market Share

**Analyses and Results**

**Table 5 Demographic Characteristics of Respondents**

|                   | <b>Responses</b> | <b>Frequency</b> | <b>Percent</b> |
|-------------------|------------------|------------------|----------------|
| Gender            | Male             | 162              | 52.4           |
|                   | Female           | 147              | 47.6           |
| Age               | Below 25 Years   | 29               | 9.4            |
|                   | 26-31 years      | 123              | 39.8           |
|                   | 32- 37 years     | 117              | 37.9           |
|                   | 38 years &above  | 40               | 12.9           |
| Marital Status    | Single           | 138              | 44.7           |
|                   | Married          | 125              | 40.5           |
|                   | Widow(er)        | 13               | 4.2            |
|                   | Separated        | 22               | 7.1            |
|                   | Divorced         | 11               | 3.6            |
| Educational Level | OND/NCE          | 121              | 39.2           |
|                   | HND/B.Sc         | 124              | 40.1           |
|                   | MBA/M.Sc         | 43               | 13.9           |
|                   | PhD              | 21               | 6.8            |
| Experience        | below 5 year     | 23               | 7.4            |
|                   | 6-11 years       | 92               | 29.8           |
|                   | 12-17 years      | 96               | 31.1           |
|                   | 18-23 years      | 43               | 13.9           |
|                   | 24-29 years      | 49               | 15.9           |
|                   | 30-35 years      | 6                | 1.9            |

**Source:** Field Survey (2024)

Table 5 shows the gender distribution of respondents. There were 162 male respondents (52.4%) and 147 female respondents (47.6%). The result implies that there more male employees than female in the selected manufacturing firms.

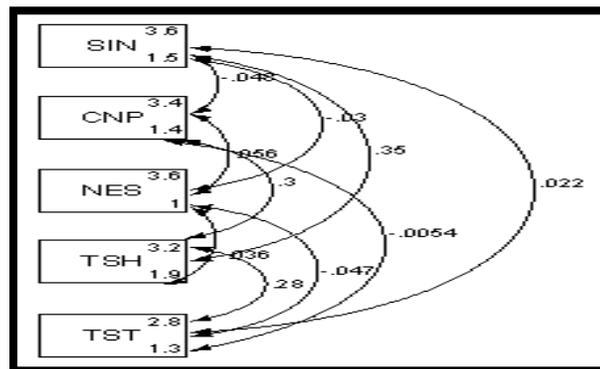
Table 5 presents the age distribution of the respondents. There were 29 respondents (9.4%) below 25 years old, 123 respondents (39.8%) between 26

and 31 years old, 117 respondents (37.9%) between 32 and 37 years old, and 40 respondents (12.9%) aged 38 years and above. The table shows that the majority of respondents fall into the age groups of 26-31 years old and 32-37 years old, with smaller proportions in the younger and older age brackets.

The table presents the marital status distribution of the respondents. There were 138 single respondents (44.7%), 125 married respondents (40.5%), 13 widowed respondents (4.2%), 22 separated respondents (7.1%), and 11 divorced respondents (3.6%). The table shows that majority of respondents were either single or married, with smaller proportions were widowed, separated, or divorced.

The table shows the education level distribution of the respondents in the study. There were 121 respondents (39.2%) with OND/NCE, 124 respondents (40.1%) with HND/B.Sc, 43 respondents (13.9%) with MBA/M.Sc, and 21 respondents (6.8%) with a PhD. The results show that the majority held either OND/NCE or HND/B.Sc degrees, with smaller proportions having MBA/M.Sc or PhD qualifications.

The table presents the work experience distribution of the respondents in the study. The table shows that there were 23 respondents (7.4%) with below 5 years of work experience, 92 respondents (29.8%) with 6-11 years, 96 respondents (31.1%) with 12-17 years, 43 respondents (13.9) with 18-23 years, 49 respondents (15.9%) with 24-29 years, and 6 respondents (1.9%) with 30-35 years. The table shows that the majority have between 6 and 29 years of work experience, with smaller proportions having fewer than 5 years of experience.



**Figure 2: Covariance of the Variables of Social Capital**

**Source:** STATA 64

Figure 2 presents the covariances of the dimensions of social capital. The variables in the model are social interaction, central network position, network size, tie strength and trust. The results are triangulated with that in Table 6.

**Table 6 Satorra-Bentler Covariance Test on the Constructs of Social Capital**

|              | <b>Coef</b> | <b>Std. Err.</b> | <b>Z</b> | <b>P&gt;z</b> | <b>[95%<br/>Interval]</b> | <b>Conf.</b> |
|--------------|-------------|------------------|----------|---------------|---------------------------|--------------|
| mean(SIN)    | 3.605       | .070             | 51.42    | 0.000         | 3.468                     | 3.743        |
| mean(CNP)    | 3.395       | .068             | 49.71    | 0.000         | 3.261                     | 3.529        |
| mean(NES)    | 3.563       | .058             | 61.83    | 0.000         | 3.450                     | 3.676        |
| mean(TSH)    | 3.230       | .079             | 40.65    | 0.000         | 3.074                     | 3.385        |
| mean(TST)    | 2.825       | .065             | 43.23    | 0.000         | 2.697                     | 2.953        |
| var(SIN)     | 1.514       | .103             | 21.23    | 0.000         | 1.325                     | 1.730        |
| var(CNP)     | 1.436       | .096             | 9.84     | 0.000         | 1.260                     | 1.637        |
| var(NES)     | 1.022       | .072             | 7.56     | 0.000         | .8904                     | 1.174        |
| var(TSH)     | 1.944       | .092             | 3.64     | 0.000         | 1.772                     | 2.133        |
| var(TST)     | 1.316       | .086             | 7.12     | 0.000         | 1.158                     | 1.495        |
| cov(SIN,CNP) | -.048       | .092             | -0.52    | 0.602         | -.228                     | .132         |
| cov(SIN,NES) | -.030       | .069             | -0.44    | 0.663         | -.165                     | .105         |
| cov(SIN,TSH) | .346        | .110             | 3.14     | 0.002         | .130                      | .563         |
| cov(SIN,TST) | .022        | .089             | 0.24     | 0.809         | -.153                     | .197         |
| cov(CNP,NES) | .056        | .074             | 0.75     | 0.452         | -.090                     | .202         |
| cov(CNP,TSH) | .298        | .101             | 2.93     | 0.003         | .0988                     | .496         |
| cov(CNP,TST) | -.005       | .085             | -0.06    | 0.949         | -.173                     | .162         |
| cov(NES,TSH) | -.036       | .082             | -0.43    | 0.665         | -.196                     | .125         |
| cov(NES,TST) | -.047       | .065             | -0.73    | 0.465         | -.174                     | .079         |
| cov(TSH,TST) | .280        | .095             | 2.95     | 0.003         | .094                      | .466         |

Source: STATA 64

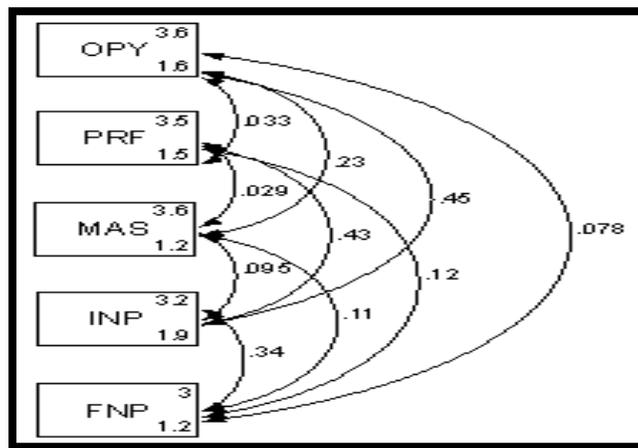
Table 6 shows the Satorra-Bentler Covariance Test on various dimensions of social capital. The mean score for social interaction is 3.605, indicating a moderately high level of perceived effective communication and collaboration among employees, suppliers, and other stakeholders. The Z-score of 51.42 is extremely high, and the P-value less than 0.01 shows that this result is statistically significant. The confidence interval [3.468, 3.743] indicates a high level of precision in this estimate. The mean score for the central network position is 3.395, implying a moderately positive perception of individuals' impact in central positions on information flow and decision-making within

manufacturing firms. The Z-score of 49.71 and P-value less than 0.01 show statistical significance. The confidence interval [3.261, 3.529] reflects a precise estimate. The mean score for network size is 3.563, indicating that respondents generally feel they have a moderately large and diverse network. The Z-score of 61.83 and P-value less than 0.01 signify a statistically significant result. The confidence interval [3.450, 3.676] shows a high level of precision in the estimate. The mean score for tie strength is 3.230, implying a moderate level of strong emotional bonds and mutual support within the network. The Z-score of 40.65 and P-value less than 0.01 show statistical significance. The confidence interval [3.074, 3.385] demonstrates a reasonably precise estimate. The mean score for trust is 2.825, indicating a moderate level of trust within the network. The Z-score of 43.23 and P-value less than 0.01 show statistical significance. The confidence interval [2.697, 2.953] shows a precise estimate.

The table also provides insights into the variances of the different constructs. The variance of social interaction is 1.514, implying a moderate level of variability in respondents' perceptions of effective communication and collaboration among employees, suppliers, and other stakeholders. The relatively small standard error (0.103) and narrow confidence interval [1.325, 1.730] shows that the estimate is precise and reliable. The variance of central network position is 1.436, indicating moderate variability in respondents' perceptions of the impact of individuals in central positions on information flow and decision-making within manufacturing firms. The small standard error (0.096) and narrow confidence interval [1.260, 1.637] suggest a precise estimate. The variance of network size is 1.022, showing relatively lower variability in respondents' perceptions of the size and diversity of their networks compared to other constructs. The small standard error (0.072) and narrow confidence interval [0.8904, 1.174] reflect a precise and reliable estimate. The variance of tie strength is 1.944, implying high variability in respondents' perceptions of the strength of their relationships, characterised by emotional bonds and mutual support. The small standard error (0.092) and confidence interval [1.772, 2.133] show that the estimate is precise. The variance of trust is 1.316, indicating moderate variability in respondents' perceptions of trust within their networks. The small standard error (0.086) and narrow confidence interval [1.158, 1.495] suggest a precise estimate.

The table shows whether there are covariances between different constructs of social capital. The covariance between social interaction and central network position is -0.048, which is close to zero and not statistically significant (p-value= 0.602). This means there is no meaningful covariance between these two constructs. The covariance between social interaction and network size is -0.030,

which is also close to zero and not statistically significant (p-value= 0.663). This shows no meaningful covariance between these constructs. The covariance between social interaction and tie strength is 0.346, which is positive and statistically significant (p-value= 0.002). This mean a low positive relationship, indicating that better social interaction is associated with stronger ties within the network. The covariance between social interaction and trust is 0.022, which is not statistically significant (p-value= 0.809). This means no meaningful covariance between these constructs. The covariance between central network position and network size is 0.056, which is not statistically significant (p-value= 0.452). This shows no meaningful covariance between these constructs. The covariance between central network position and tie strength is 0.298, which is positive and statistically significant (p-value= 0.003). This indicates a moderate positive covariance, indicating that central network positions are associated with stronger ties. The covariance between central network position and trust is -0.005, which is not statistically significant (p-value= 0.949). This means no meaningful covariance between these constructs. The covariance between network size and tie strength is -0.036, which is not statistically significant (p-value= 0.665). This shows no meaningful covariance between these constructs. The covariance between network size and trust is -0.047, which is not statistically significant (p-value= 0.465). This indicates no meaningful covariance between these constructs. The covariance between tie strength and trust is 0.280, which is positive and statistically significant (p-value= 0.003). This indicates a moderate positive covariance, indicating that stronger ties within the network are associated with higher levels of trust. The results showing covariances (less than 0.5) implies that there are no issues with credibility in the dataset.



**Figure 3: Covariance of the Variables of Performance**

Source: STATA 64

Figure 3 presents the covariances of the dimensions of performance of manufacturing. The variables in the model are operational efficiency, profitability, market share, innovation performance and financial performance. The results are triangulated with that in Table 7.

**Table 7 Satorra-Bentler Covariance Test on the Constructs of Performance**

|              | Coef  | Std. Err. | Z     | P>z   | [95%<br>Interval] | Conf. |
|--------------|-------|-----------|-------|-------|-------------------|-------|
| mean(OPY)    | 3.602 | .0713     | 50.51 | 0.000 | 3.462             | 3.742 |
| mean(PRF)    | 3.482 | .0701     | 49.70 | 0.000 | 3.344             | 3.620 |
| mean(MAS)    | 3.550 | .0626     | 56.75 | 0.000 | 3.428             | 3.673 |
| mean(INP)    | 3.168 | .0779     | 40.68 | 0.000 | 3.016             | 3.321 |
| mean(FNP)    | 3.000 | .062      | 48.24 | 0.000 | 2.878             | 3.122 |
| var(OPY)     | 1.566 | .104      | 23.12 | 0.000 | 1.376             | 1.784 |
| var(PRF)     | 1.512 | .102      | 4.75  | 0.000 | 1.325             | 1.725 |
| var(MAS)     | 1.205 | .080      | 10.23 | 0.000 | 1.059             | 1.373 |
| var(INP)     | 1.868 | .092      | 11.45 | 0.000 | 1.696             | 2.058 |
| var(FNP)     | 1.191 | .080      | 2.87  | 0.000 | 1.045             | 1.357 |
| cov(OPY,PRF) | .033  | .096      | 0.35  | 0.727 | -.154             | .221  |
| cov(OPY,MAS) | .225  | .086      | 2.63  | 0.009 | .0572             | .394  |
| cov(OPY,INP) | .449  | .113      | 3.99  | 0.000 | .2281             | .670  |
| cov(OPY,FNP) | .078  | .090      | 0.87  | 0.387 | -.098             | .254  |
| cov(PRF,MAS) | .029  | .081      | 0.36  | 0.719 | -.130             | .188  |
| cov(PRF,INP) | .427  | .103      | 4.15  | 0.000 | .225              | .628  |
| cov(PRF,FNP) | .117  | .080      | 1.45  | 0.147 | -.041             | .274  |
| cov(MAS,INP) | .095  | .091      | 1.05  | 0.294 | -.083             | .273  |
| cov(MAS,FNP) | .110  | .074      | 1.49  | 0.136 | -.035             | .255  |
| cov(INP,FNP) | .340  | .095      | 3.57  | 0.000 | .153              | .527  |

Source: Field Survey, 2024

Table 7 shows that the mean score for operational efficiency is 3.602, with a highly significant Z-value of 50.51 (p-value < 0.001). The confidence interval indicates that the true mean is between 3.462 and 3.742. This shows a generally high level of perceived operational efficiency among respondents. The mean score for profitability is 3.482, with a significant Z-value of 49.70 (p-value < 0.001). The confidence interval indicates that the true mean is between 3.344

and 3.620. This reflects a high level of perceived profitability within firms. The mean score for market share is 3.550, with a highly significant Z-value of 56.75 (p-value < 0.001). The confidence interval indicates that the true mean is between 3.428 and 3.673. This shows a strong market position relative to competitors. The mean score for innovation performance is 3.168, with a significant Z-value of 40.68 (p-value < 0.001). The confidence interval indicates that the true mean is between 3.016 and 3.321. This shows a moderate level of perceived innovation within the firms. The mean score for financial performance is 3.000, with a significant Z-value of 48.24 (p-value < 0.001). The confidence interval indicates that the true mean is between 2.878 and 3.122. This shows a moderate level of perceived financial performance.

The table also shows that the variance for operational efficiency is 1.566, implying a moderate spread in how respondents perceive operational efficiency within the firm. The confidence interval shows that the true variance is between 1.376 and 1.784, reflecting some variability in responses. The variance for profitability is 1.512, indicating a moderate spread in perceptions of the firm's profitability. The confidence interval, ranging from 1.325 to 1.725, shows that there are some variability in how profitability is perceived by respondents. The variance for market share is 1.205, implying a relatively lower spread compared to other constructs. The confidence interval (1.059 to 1.373) shows that respondents' perceptions of market share are somewhat consistent but still show some variability. The variance for innovation performance is 1.868, indicating a higher spread in perceptions of innovation within the firms. The confidence interval (1.696 to 2.058) indicates considerable variability in how respondents view the firms' innovation performance. The variance for financial performance is 1.191, showing a relatively lower spread in perceptions. The confidence interval (1.045 to 1.357) shows that there are some variability, but perceptions are more consistent compared to other constructs.

The table shows that the covariance between operational efficiency and profitability is 0.033, which is not statistically significant (p-value < 0.01). This shows that there is no strong covariance between these two constructs. The covariance between operational efficiency and market share is 0.225, which is statistically significant (p-value < 0.01). This indicates a positive relationship, showing that as operational efficiency increases, market share tends to increase as well. The covariance between operational efficiency and innovation performance is 0.449, which is statistically significant (p-value < 0.01). This shows a strong positive relationship, meaning that higher operational efficiency is associated with higher innovation performance. The covariance between operational efficiency and financial performance is 0.078, which is not

statistically significant (p-value < 0.01). This indicates there is no strong covariance between these two constructs. The covariance between profitability and market share is 0.029, which is not statistically significant (p-value > 0.05). This shows there is no strong covariance between these two constructs. The covariance between profitability and innovation performance is 0.427, which is statistically significant (p-value < 0.01). This indicates a strong positive relationship, indicating that higher profitability is associated with higher innovation performance. The covariance between profitability and financial performance is 0.117, which is not statistically significant (p-value > 0.05). This indicates there is no strong covariance between these two constructs. The covariance between market share and innovation performance is 0.095, which is not statistically significant (p-value > 0.05). This shows there is no strong covariance between these two constructs. The covariance between market share and financial performance is 0.110, which is not statistically significant (p-value > 0.05). This indicates there is no strong covariance between these two constructs. The covariance between innovation performance and financial performance is 0.340, which is statistically significant (p-value < 0.01). This indicates a strong positive relationship, indicating that higher innovation performance is associated with better financial performance.

**Table 8: Regression Analysis on Social Interaction and Operational Efficiency**

| Variable           | Coefficient | Std. Error            | t-Statistic | Prob.    |
|--------------------|-------------|-----------------------|-------------|----------|
| C                  | 0.277227    | 0.093305              | 2.971188    | 0.0032   |
| SIN                | 0.922205    | 0.024494              | 37.65088    | 0.0000   |
| R-squared          | 0.821987    | Mean dependent var    |             | 3.601942 |
| Adjusted R-squared | 0.821407    | S.D. dependent var    |             | 1.253617 |
| S.E. of regression | 0.529782    | Akaike info criterion |             | 1.573750 |
| Sum squared resid  | 86.16544    | Schwarz criterion     |             | 1.597914 |
| Log likelihood     | -241.1444   | Hannan-Quinn criter.  |             | 1.583411 |
| F-statistic        | 1417.588    | Durbin-Watson stat    |             | 1.948983 |
| Prob(F-statistic)  | 0.000000    |                       |             |          |

**Source:** Author's Computation Using E-views

Model Line:  $OPY = \beta_0 + \beta_1SIN + \varepsilon$

Regression Line:  $OPY = 0.277227 + 0.922205SIN$

Table 8 examined the effect of social interaction on the operational efficiency of manufacturing firms. The R-squared value is 0.821987, indicating that

approximately 82.2% of the variation in operational efficiency is explained by social interaction. This is a very high proportion, implying a strong relationship. The remaining 17.8% shows that the variation in operational efficiency can also be explained by other variables. The adjusted R-squared value is 0.821407, which adjusts for the number of predictors in the model. The minimal difference between R-squared and adjusted R-squared indicates that the model is well fitted and that unnecessary predictors do not inflate the explanatory power.

The standard error of the regression is 0.529782. This represents the typical distance that the observed values fall from the regression line. The lower value shows a better fit. The sum squared residuals is 86.16544, which measures the total deviation of the response values from the fit to the response values. The Model Selection Criteria shows Akaike Information Criterion with 1.573750, Schwarz Criterion with 1.597914 and Hannan-Quinn Criterion with 1.583411. These criteria are used for model selection where lower values show a better-fitting model. The F-statistic is 1417.588 with a p-value less than 0.01, indicating that the overall regression model is statistically significant. This means that the independent variable (social interaction) collectively explains a significant portion of the variability in the dependent variable (operational efficiency). The Durbin-Watson statistic is 1.948983, which is close to 2. This indicates that there is no significant autocorrelation in the residuals of the model.

The coefficient for the constant term is 0.277227, with a standard error of 0.093305. The t-statistic is 2.971188, and the associated p-value is 0.0032. This shows that the constant term is statistically significant at p-value less than 0.01. The coefficient for social interaction is 0.922205, with a standard error of 0.024494. The t-statistic is extremely high at 37.65088, and the p-value is less than 0.01. The analysis demonstrates a robust and highly significant positive linear relationship between social interaction and operational efficiency in manufacturing firms. The result implies that for each unit increase in social interaction, operational efficiency increases by approximately 0.92 units, holding other factors constant. This indicates that social interaction has a highly positive and statistically significant effect on operational efficiency.

**Table 9: Regression Analysis on Central Network Position and Profitability of Manufacturing Firms**

| Variable           | Coefficien<br>t | Std. Error            | t-Statistic | Prob.    |
|--------------------|-----------------|-----------------------|-------------|----------|
| C                  | 0.474873        | 0.106331              | 4.466005    | 0.0000   |
| CNP                | 0.885857        | 0.029535              | 29.99351    | 0.0000   |
| R-squared          | 0.745568        | Mean dependent var    |             | 3.482201 |
| Adjusted R-squared | 0.744740        | S.D. dependent var    |             | 1.231555 |
| S.E. of regression | 0.622222        | Akaike info criterion |             | 1.895413 |
| Sum squared resid  | 118.8583        | Schwarz criterion     |             | 1.919577 |
| Log likelihood     | -290.8413       | Hannan-Quinn criter.  |             | 1.905073 |
| F-statistic        | 899.6109        | Durbin-Watson stat    |             | 1.546867 |
| Prob(F-statistic)  | 0.000000        |                       |             |          |

**Source:** Author's Computation Using E-views

Model Line:  $PRF = \beta_0 + \beta_1CNP + \varepsilon$

Regression Line:  $PRF = 0.474873 + 0.885857CNP$

The results in Table 9 shows the effect of central network position on the profitability of manufacturing firms. The R-squared value is 0.745568, indicating that approximately 74.6% of the variation in profitability is explained by the central network position. This is a substantial proportion, implying a strong relationship between central network position and profitability. The remaining 25.4% shows that the variation in profitability can also be explained by other variables. The adjusted R-squared value is 0.744740, and it adjusts for the number of predictors in the model. The minimal difference between R-squared and adjusted R-squared indicates that the model is well-fitted.

The standard error of the regression is 0.622222. This represents the typical distance that the observed values fall from the regression line, with the lower value indicating a better fit. The sum-squaredresiduals (SSR) is 118.8583, and it measures the total deviation of the response values from the fit to the response values. The Model Selection Criteria shows Akaike Information Criterion (1.895413), Schwarz Criterion (1.919577), and Hannan-Quinn Criterion (1.905073). These criteria were used for model selection where lower values show a better-fitting model. The F-statistic is 899.6109 with a p-value less than 0.01, indicating that the overall regression model is statistically significant. This means that the independent variable (central network position) collectively explains a significant portion of the variability in the dependent variable (profitability). The Durbin-Watson statistic is 1.546867, which is moderately

close to 2. This indicates there is a low to moderate risk of autocorrelation in the residuals of the model.

The coefficient for the constant term is 0.474873, with a standard error of 0.106331. The t-statistic is 4.466005, and the associated p-value is less than 0.01. This shows that the constant term is highly significant. The coefficient for the central network position is 0.885857, with a standard error of 0.029535. The t-statistic is extremely high at 29.99351, and the p-value is less than 0.01. The result demonstrates a robust and highly significant positive relationship between central network position and profitability in manufacturing firms. The result implies that for each unit increase in central network position, profitability increases by approximately 0.89 units, holding other factors constant. This substantial effect size underscores the critical role that having a central position within a network plays in enhancing profitability. This strong significance indicates that central network position has a highly positive and statistically significant effect on profitability.

**Table 10: Regression Analysis on Network Size and Market Share**

| Variable           | Coefficient | Std. Error            | t-Statistic | Prob.    |
|--------------------|-------------|-----------------------|-------------|----------|
| C                  | 0.232258    | 0.117988              | 1.968489    | 0.0499   |
| NES                | 0.931183    | 0.031856              | 29.23140    | 0.0000   |
| R-squared          | 0.735681    | Mean dependent var    |             | 3.550162 |
| Adjusted R-squared | 0.734820    | S.D. dependent var    |             | 1.099694 |
| S.E. of regression | 0.566294    | Akaike info criterion |             | 1.707046 |
| Sum squared resid  | 98.45161    | Schwarz criterion     |             | 1.731210 |
| Log likelihood     | -261.7386   | Hannan-Quinn criter.  |             | 1.716707 |
| F-statistic        | 854.4747    | Durbin-Watson stat    |             | 2.375347 |
| Prob(F-statistic)  | 0.000000    |                       |             |          |

**Source:** Author's Computation Using E-views

Model Line:  $MAS = \beta_0 + \beta_1NES + \varepsilon$

Regression Line:  $MAS = 0.232258 + 0.931183NES$

Table 10 presents the results of a regression analysis examining the effect of network size on the market share of manufacturing firms. The R-squared value is 0.735681, meaning that approximately 73.6% of the variance in market share is explained by network size. This shows a strong relationship between network size and market share. The remaining 26.4% shows that the variation in market share can also be explained by other variables. The adjusted R-squared value is

0.734820, which adjusts for the number of predictors in the model. The minimal difference between R-squared and adjusted R-squared indicates that the model fits the data well.

The standard error of the regression is 0.566294, indicating the typical distance that the observed values fall from the regression line. The sum squared residuals (SSR) is 98.45161, measuring the total deviation of the response values from the fit to the response values. The Model Selection Criteria shows Akaike Information Criterion (1.707046), Schwarz Criterion (1.731210), and Hannan-Quinn Criterion (1.716707). These criteria are used for model selection where the lower values show a better-fitting model. The F-statistic is 854.4747 with a p-value less than 0.01000, indicating that the overall regression model is highly significant. This means that network size explains a significant portion of the variability in market share. The Durbin-Watson statistic is 2.375347, which is close to 2, implying that there is little to no autocorrelation in the residuals of the model.

The coefficient for the constant term is 0.232258, with a standard error of 0.117988. The t-statistic is 1.968489, and the associated p-value is less than 0.05, which is slightly below the common significance level of 0.05. This indicates that the constant term is marginally significant. The coefficient for network size is 0.931183, with a standard error of 0.031856. The t-statistic is extremely high at 29.23140, and the p-value is less than 0.01. The result shows a strong positive and statistically significant relationship between network size and market share in manufacturing firms. This result implies that for each unit increase in network size, market share increases by approximately 0.93 units, holding other factors constant. This shows that network size has a highly positive and statistically significant effect on market share.

### **Discussion of Findings**

Finding showed that social interaction has a significant positive effect on operational efficiency of manufacturing firms. This implies that encouraging social interaction among employees can lead to significant improvements in operational efficiency. This demonstrates the critical role that social interactions play in enhancing operational efficiency. This study emphasizes the value of promoting strong social interactions among employees to drive enhancements in operational efficiency. For instance, the study conducted by Nguyen and Ha (2020), Moon et al. (2022), and Kaberia et al. (2022) revealed that both internal and external social capital positively impact business performance. However, what sets apart the current study is its specific focus on the role of social interaction in internal social capital within manufacturing firms. Previous

research often overlooked the direct influence of social interaction on operational efficiency. By incorporating insights from studies by Chen et al. (2018), Lee and Ha (2018), and Prieto-Pastor et al. (2018), it becomes evident that social interaction is a crucial factor in shaping and leveraging social capital to drive organizational success.

Finding showed that central network position has a significant positive effect on profitability of manufacturing firms. This demonstrates the critical importance of firms strategically placing themselves at the center of their professional networks. Fonfara et al. (2021) elaborate that a firm's network position is subject to constant fluctuations due to various factors influencing its position within the network, as well as continual adjustments in the firm's actions to shape its network position. Central network position can offer manufacturing firms enhanced access to crucial information, resources, and opportunities, all of which are instrumental in driving profitability. This aligns with the findings of Moon et al. (2022) and Shi et al. (2019) that a firm's location within its supply network significantly affects its performance. The study by Shi et al. (2019) further supports this notion by highlighting the substantial influence of a firm's supply network location on its overall performance.

Finding showed that network size has effect on market share of manufacturing firms. This finding highlights the crucial role that network size plays in enhancing market share. The results align with Analia et al.'s (2020) findings, suggesting a significant relationship between network size and performance in small and micro enterprises. The recent research finding has brought to light the significant effect of network size on the market share of manufacturing firms. This demonstrates the pivotal role that the size of a firm's network plays in driving improvements in market share. The study's finding aligns with those of Analia et al. (2020), who also found that the size of networks influences the performance of small micro-enterprises. Understanding the influence of network size on market share is crucial for manufacturing firms aiming to expand their market presence and competitiveness. A larger network size can provide firms with access to a broader range of resources, connections, and opportunities, which can directly contribute to increased market share. The study by Analia et al. (2020) further emphasizes the significance of network size, particularly for small micro-enterprises, in shaping their overall performance and market outcomes.

## **Conclusion**

This study strongly supports the notion that social capital plays a crucial role in enhancing the performance of manufacturing firms in South East Nigeria. The study provides empirical evidences that the components of social capital (social

interaction, central network position, and network size) can substantially affect performance of manufacturing firms. This study provides evidence on the importance of social interaction in improving operational efficiency in manufacturing companies. It underpins the need for management to actively cultivate and maintain social capital, acknowledging it as a critical element for achieving organizational objectives. By promoting strong social connections and fostering collaborative atmospheres, manufacturing firms can utilize these networks to enhance performance and creativity. Ultimately, dedicating resources to developing social capital not only enhances efficiency but also fosters a more united and adaptable organizational ethos.

The study presents strong evidence that being positioned centrally within a network significantly influences the profitability of manufacturing firms. Firms with central network positions can influence and leverage their networks more effectively. Manufacturing firms that strategically place themselves at the center of their networks stand to gain considerable profitability advantages, highlighting the importance of management prioritizing activities that strengthen their networks. By concentrating on establishing and preserving central network positions, manufacturing firms can improve their access to valuable resources, information, and opportunities. This strategic focus on network centrality has the potential to create lasting competitive advantages, enhance financial performance, and increase market influence in the long run. Cultivating strong network connections is crucial for long-term success and expansion.

The study unveiled that the network size plays a crucial role in determining the market share of manufacturing firms. Manufacturing firms that strategically increase the size of their networks are expected to experience significant enhancements in their market share, resulting in long-term competitive benefits and improved business performance. A larger network can assist manufacturing firms in gathering market insights, staying abreast of industry developments, and promptly addressing market requirements. This flexibility can lead to an expansion in market share. Sustaining a large network can offer a lasting competitive edge. Manufacturing firms with extensive networks can better coordinate supply chains, product distribution, and market entry strategies.

### **Recommendations**

Based on the findings of the study, the following recommendations are madetthat:

1. Firms should consider implementing strategies that promote social interaction like team-building activities, and open communication

channels. These practices will create a more cohesive work environment that can enhance overall operational efficiency. Management should create policies that acknowledge and incentivize social interactions and collaborations. By officially incorporating social interaction into performance measures and rewards, manufacturing firms can maintain and enhance operational efficiency.

2. Manufacturing firms should prioritize the development of strategies that boost their network centrality. This may entail engaging proactively in industry associations, forming partnerships, and attending networking events to heighten their presence and impact within the network. Encouraging employees to establish and nurture robust professional connections can also aid in enhancing the firms' central network position. These efforts have the potential to positively affect the profitability of manufacturing firms.
3. Manufacturing firms should concentrate on implementing tactics to expand their network size. This may include engaging in networking activities, participating in industry events, and establishing strategic partnerships. A larger network can result in greater business prospects, customer recommendations, and improved brand recognition, all of which contribute to a heightened market share.

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