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Social Capital as a Lifeline for Business Continuity: Does Firm Resilience Matter?

Prosper Mawutor Akudey
University of Education, Winneba
Bernard Tutu-Boahene
University of Education, Winneba
Samuel Oduro Owusu
samowusu667@gmail.com

University of Education, Winneba
Ramnik Sidhu
Manipal Academy of Higher Education

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Abstract

This study investigates the conditional effect of firm resilience on the relationship between social capital and business continuity among Ghanaian vegetable agribusinesses, anchored in Network Theory and Dynamic Capabilities Theory. Amid Ghana's economic vulnerabilities and agricultural disruptions, social capital enables access to resources and coordination, while firm resilience facilitates adaptation and transformation. Prior empirical evidence highlights social capital's role in performance and recovery, yet gaps persist in understanding resilience as a moderator in developing contexts. Adopting a positivist paradigm and an explanatory design, the research employed quantitative methods using structured questionnaires adapted from validated scales, thereby confirming its direct enhancement of operational stability. The findings indicate that social capital does not have a significant effect on business continuity, although it significantly enhances firm resilience. The results further show that firm resilience has a strong positive effect on business continuity, highlighting its critical role in sustaining agribusiness operations. In addition, firm resilience significantly moderates the relationship between social capital and business continuity, though the interaction effect is weak and negative. The model explained 48.4% of the variance in business continuity, with robust reliability and validity. The results imply that social capital does not directly influence business continuity, but it contributes significantly to building firm resilience, which subsequently enhances business continuity, while firm resilience also slightly moderates the relationship between social capital and business continuity.

Introduction

Business continuity has become an indispensable factor for ensuring the long-term stability, competitiveness, and adaptability of firms operating in an increasingly uncertain global environment (Moşteanu, 2024). It encompasses an organisation's ability to maintain critical functions and operations during and after crises such as economic downturns, pandemics, or technological disruptions. In Ghana, where the private sector contributes substantially to national GDP and accounts for about 85% of total employment (Alagidede et al., 2013), ensuring uninterrupted business operations is crucial for sustaining livelihoods, employment, and economic growth. Globally, small and medium-sized enterprises (SMEs) account for over 90% of all businesses and employ more than half of total employment (Algan, 2019). Thus, business continuity extends beyond individual firms, representing a broader economic and social imperative that underpins resilience and sustainable development at both national and global levels.

The pursuit of business continuity directly aligns with the United Nations Sustainable Development Goals (SDGs), particularly SDG 8 (Decent Work and Economic Growth) and SDG 9 (Industry, Innovation and Infrastructure), which emphasise resilience, productivity, and innovation as key drivers of sustainable economic systems (Shafik, 2025). In Ghana, this focus is particularly significant due to recurring challenges, including unstable market conditions, limited financing options, and insufficient preparedness for crises. Despite the private sector's critical role in driving growth, many firms in the country remain vulnerable to environmental, economic, and institutional shocks that hinder their operational sustainability (Attah et al., 2025). Research across contexts indicates that firms capable of

maintaining operations amid turbulence are those that exhibit strong resilience, characterised by flexibility, innovation, and the capacity to learn and adapt to evolving circumstances (Napier et al., 2024). However, in developing economies, structural weaknesses such as limited inter-firm collaboration, insufficient institutional support, and poor crisis management practices often inhibit firms' ability to withstand and recover from shocks (Amoako & Lyon, 2014).

According to the World Bank, firms in developing countries need to strengthen both internal capabilities and external linkages to enhance adaptability and ensure sustained operations during disruptions (Abiad et al., 2015). This highlights the strategic importance of social capital, which is the networks of trust, collaboration, and reciprocity that enable firms to access critical resources, share information, and coordinate responses during crises. Social capital plays a crucial role in fostering resilience and business continuity by enhancing coordination, facilitating knowledge exchange, and promoting collective problem-solving (Corrales-Estrada et al., 2021). Empirical evidence suggests that firms with strong social networks tend to recover faster from disruptions and are better positioned to innovate and adapt (Polyviou et al., 2020). Nonetheless, the degree to which social capital translates into sustainable operations often depends on the level of firm resilience, which enables organisations to absorb, adapt, and transform in response to shocks (Bannikova & Mykhaylyova, 2024).

Firm resilience reflects a company's ability to maintain essential functions and pursue opportunities amid adversity (Norton et al., 2015). In Ghanaian enterprises, resilience manifests in how effectively management and employees utilize relationships and resources to stabilize operations during crises. Studies indicate that resilient firms are better able to leverage social networks to ensure continuity outcomes, such as consistent service delivery, innovation, and supply chain stability (Holtgrave et al., 2019). Conversely, firms with weak resilience often struggle to capitalise on social ties, resulting in delayed recovery and reduced competitiveness (Figenschou, 2020). The interrelationship among social capital, firm resilience, and business continuity can be better understood by integrating Network Theory and Dynamic Capabilities. Network Theory posits that organizational success and sustainability rely heavily on the structure and quality of inter-organizational relationships that enable access to resources, trust, and information (Moliterno & Mahony, 2011). Dynamic Capabilities Theory, on the other hand, emphasizes the firm's capacity to integrate, build, and reconfigure internal and external competencies to respond effectively to environmental changes (Teece et al., 1997). Together, these theories provide a comprehensive framework for understanding how external social linkages and internal adaptive capabilities interact to sustain organisational continuity during disruptions.

The agricultural sector in Ghana provides a particularly relevant context for studying these relationships. Agriculture remains central to the country's economy, employing nearly half of the national workforce and contributing significantly to GDP (Ferreira et al., 2022). However, the sector faces persistent threats from climate variability, market disruptions, and institutional inefficiencies that undermine productivity and food security (El-Hermisy, 2021). The ability of agricultural enterprises, cooperatives, and agribusinesses to sustain operations amid such challenges is crucial for achieving SDG 2 (Zero Hunger) and SDG 8 (Decent Work and Economic Growth) (Hiywotu, 2025). Within this context, social capital plays

a pivotal role in ensuring business continuity. However, its effectiveness depends mainly on the firm's or organisation's resilience.

Many Ghanaian farmers and agribusinesses struggle to translate their social relationships into sustainable operational outcomes, largely due to weak inter-firm collaboration, low trust, and limited information-sharing practices (Tham-Agyekum et al., 2024). Farmer-Based Organisations (FBOs), which should serve as platforms for cooperation and mutual support, often face barriers that hinder collective action and adaptive learning (Ofolsha et al., 2022). As a result, many agricultural enterprises fail to sustain operations following climate shocks, price fluctuations, or supply chain interruptions (Hamidu et al., 2022). This points to a deeper issue of limited firm resilience, which constrains agricultural entities' ability to transform social linkages into adaptive strategies and continuity outcomes. Without adequate resilience, firms lack the dynamic capabilities such as flexibility, resource reconfiguration, and organisational learning necessary for survival and adaptation (Bannikova & Mykhaylyova, 2024).

The implications of weak resilience are profound. Low adaptive capacity undermines innovation, knowledge transfer, and risk management, exposing agricultural enterprises to market failures, financial instability, and productivity losses (Manning, 2024). Consequently, Ghana's broader progress toward sustainable agricultural development and economic transformation remains constrained (Asare-Nuamah et al., 2023). While prior research acknowledges that social capital enhances organisational performance and adaptability (Acquah et al., 2024), limited attention has been given to how firm resilience conditions the relationship between social capital and business continuity in the agricultural context. Most existing studies have focused on industrial or service sectors (Setini et al., 2020), leaving a critical empirical gap regarding how adaptive capacity moderates the influence of social relationships on continuity among Ghanaian agribusinesses.

This study, therefore, seeks to address these gaps by examining the conditional effect of firm resilience on the relationship between social capital and business continuity among farmers and agribusiness organisations in Ghana. Anchored in Network Theory and Dynamic Capabilities Theory, it explores how trust, collaboration, and information sharing foster continuity, and how resilience enhances firms' ability to adapt, reconfigure resources, and sustain operations amid uncertainty. Specifically, the study aims to: (1) examine the effect of social capital on business continuity, (2) assess the effect of firm resilience on business continuity, (3) examine the effect of social capital on firm resilience, and (4) determine the moderating effect of firm resilience on the relationship between social capital and business continuity.

Theoretical review

This study is anchored on network theory and dynamic capabilities theory, which together provide a comprehensive framework for examining the relationship between social capital, firm resilience, and business continuity. The network theory explains the baseline relationship between the independent variable (social capital) and the dependent variable (business continuity). In contrast, the dynamic capabilities theory clarifies the moderating role of firm resilience in this relationship. The network theory,

as developed by Granovetter (1973) and further elaborated by Wasserman and Faust (1994), posits that the structure and quality of relationships among actors influence the flow of information, resources, and opportunities. It emphasises that firms are embedded in social networks through which they access resources and knowledge that enhance performance and adaptability. Within this study, Network Theory provides the foundation for understanding how social capital contributes to business continuity. According to Ababio et al. (2023) and Mensah (2022), social capital comprises structural, relational, and cognitive dimensions that facilitate cooperation and information exchange.

Firms with strong networks are better positioned to respond to disruptions and recover from crises because of the trust and mutual support embedded in these relationships. Empirical evidence shows that well-connected firms display superior continuity and performance in uncertain environments (Burt, 1992; Ma, 2024; Chen et al., 2025). In Ghana, where institutional support systems may be limited, social networks often substitute for formal mechanisms, making social capital a vital driver of continuity and recovery. Thus, the Network Theory explains how the existence and quality of relationships serve as channels through which firms sustain operations during disruptions.

In contrast, the dynamic capabilities theory, introduced by Teece et al. (1997), explains how firms build and renew internal competencies to adapt to changing environments. The theory emphasises that sustainable advantage arises not only from possessing valuable resources but from the ability to sense, seize, and transform them in response to environmental changes (Teece, 2007). Within this framework, firm resilience represents a dynamic capability that allows firms to anticipate risks, adapt to shocks, and maintain critical functions under stress. Teece et al. (2016) further note that resilient firms can quickly reconfigure and redeploy resources, enabling them to survive and thrive despite turbulence. In this study, firm resilience is conceptualised as a moderating variable that strengthens the relationship between social capital and business continuity. While social capital provides access to valuable information and support networks, it is the firm's dynamic capability that determines how effectively these resources are mobilised to ensure continuity.

Studies support this integrated theoretical view. Lin and Wu (2014) demonstrated that dynamic capabilities enhance firms' adaptability and competitiveness, while Ferreira et al. (2022) showed that such capabilities enable firms to leverage network relationships more effectively. Similarly, Asamoah et al. (2020) found that resilient Ghanaian firms use their social connections and adaptive capabilities to withstand market and operational disruptions. Therefore, by combining network theory and dynamic capabilities theory, this study offers a holistic understanding of how social capital influences business continuity and how firm resilience moderates this effect within Ghanaian enterprises.

Conceptual Understanding

Social capital was first defined by Hanifan (1916) as goodwill, fellowship, and mutual sympathy that promote cooperation in communities. Bourdieu (1986) conceptualised it as resources derived from durable social networks, while Coleman (1988) viewed it as social structures that facilitate coordinated

action. Putnam (1993) further defined it as networks, norms, and trust that enable collective action for mutual benefit. Contemporary scholars describe it as relational, cognitive, and structural resources that enhance collaboration and resilience in organisations. In this study, social capital refers to the interconnected networks of trust, shared values, and relationships that provide access to information and support. It is viewed as a mechanism that strengthens resilience, adaptability, and business continuity among agribusiness actors in Ghana.

Firm resilience originated from ecological and psychological studies and refers to how organisations adapt and recover from disruptions. Hamel and Välikangas (2003) define it as the ability of firms to continuously reinvent themselves, while Lengnick-Hall et al. (2011) view it as a dynamic capability to absorb shocks, learn, and adapt. Teece et al. (2016) link it to sensing, seising, and reconfiguring resources for sustained competitiveness. Duchek (2020) further describes it as adaptive, absorptive, and transformative capacities that enable firms to grow stronger after crises. In agribusiness, it reflects the ability to maintain productivity and supply chains amid shocks like climate and market risks. In this study, firm resilience refers to the capability of agricultural enterprises in Ghana to anticipate, absorb, and adapt to disruptions while sustaining business continuity.

Business continuity in agribusiness refers to the ability of farming enterprises and value chains to anticipate, respond to, and recover from disruptions that threaten production and market stability. It originated from disaster recovery planning focused on restoring operations but has evolved into a broader resilience and risk management concept (Hiles, 2010; Herbane et al., 2004). Hiles (2010) defined it as maintaining critical operations during disruptions through planned strategies, while Duchek (2020) emphasised its role in enhancing adaptive capacity. Lindstedt and Mark-Armour (2017) described it as a process of risk anticipation, preparedness, and recovery. In agriculture, it involves sustaining production, supply chains, and market access amid shocks such as climate and market risks. In this study, it is conceptualised as the proactive capability of agribusiness firms in Ghana to mitigate risks, maintain operations, and recover quickly to ensure sustainability.

Hypotheses Development

Social capital and Business Continuity

Social capital, as conceptualised through trust, networks and shared norms (Putnam, 1993; Coleman, 1988), enhances access to information and collaborative support systems that strengthen organisational stability and continuity. Evidence from Nyarku (2024) and Boateng et al. (2024) shows that relational, cognitive and structural social capital significantly improve organisational and SME performance through improved knowledge access and coordination. Similarly, Wibowo et al. (2022) and Salisu et al. (2019) demonstrate that bonding social capital strengthens entrepreneurial persistence during crises, while Odoch et al. (2025) and Shan and Tian (2022) highlight its role in sustaining operations through emotional and structural support mechanisms. Across diverse contexts, these studies consistently show that strong social ties enhance firms' ability to withstand disruptions and

maintain operations. Grounded in Network Theory, which emphasises the value of interconnected relationships in resource access and coordination, it is therefore hypothesised that:

H1: Social capital has positive effect on business continuity.

Firm resilience and business continuity

Firm resilience, defined as the adaptive, absorptive and transformative capability of firms to respond to disruptions (Lengnick-Hall et al., 2011; Duchek, 2020; Teece et al., 2016), enables organisations to maintain operations under uncertainty. Studies by Buzzao and Rizzi (2023) show that resilience-driven dynamic capabilities significantly improve continuity through faster recovery and adaptation, while Ama et al. (2022) confirm that entrepreneurial resilience enhances business continuity among SMEs. Further evidence from Ge et al. (2022) and Wamalwa and Ochola (2022) demonstrates that resilient firms experience reduced disruption impacts and quicker operational recovery, while El Baz and Ruel (2022) show that preparedness and continuity practices embedded in resilience frameworks enhance sustained operations. Anchored in Dynamic Capabilities Theory, which explains how firms reconfigure resources to adapt to changing environments, it is therefore hypothesised that:

H2: Firm resilience has positive effect on business continuity.

Social capital and Firm resilience

Social capital, comprising structural, relational, and cognitive dimensions (Bourdieu, 1986; Nahapiet & Ghoshal, 1998), provides firms with access to shared knowledge, trust, and cooperative networks that enhance their adaptive capacity. Evidence from Jia et al. (2020) shows that structural and relational social capital strengthen both proactive and reactive resilience in firms. Khoa et al. (2021) further confirm that social capital improves supply chain resilience through enhanced collaboration and knowledge sharing, while Bhambri et al. (2025) and Ozanne et al. (2022) demonstrate that social networks facilitate dynamic capabilities and crisis adaptation. Additionally, Hurtado and Herrero (2024) and Chowdhury et al. (2024) highlight that relational capital, combined with human capabilities, strengthens organisational resilience. Grounded in Network Theory and Dynamic Capabilities Theory, which emphasise resource access and adaptive reconfiguration through relationships, it is therefore hypothesised that:

H3: Social capital has positive effect on firm resilience.

Moderating effect of firm resilience on social capital and business continuity

The interaction between social capital and firm resilience suggests that while social capital provides access to resources and networks, resilience determines the extent to which firms can effectively utilise

these resources to sustain continuity. Studies by Danso et al. (2024) and Mensah (2024) indicate that resilience strengthens the effectiveness of relational resources in enhancing performance and continuity outcomes. Jia et al. (2020) further demonstrate that resilience capacities shape how social capital translates into operational continuity through anticipatory and recovery mechanisms, while Essuman et al. (2024) and Opoku-Boateng et al. (2024) show that resilience buffers stressors and enhances the utility of social networks in sustaining operations. Similarly, Chowdhury et al. (2024) find that stronger resilience enhances the impact of relational capital on organisational stability. Guided by Dynamic Capabilities Theory, which posits that adaptive capacity determines the effectiveness of resource utilisation under uncertainty, it is therefore hypothesised that:

H4: Firm resilience moderates the relationship between social capital and business continuity.

Research Methodology

The study's methodological framework is rooted in a positivist paradigm, emphasising objective, measurable reality independent of human perception. Epistemologically, it assumes that knowledge about social capital, organisational culture and business continuity can be uncovered through systematic observation and empirical measurement using standardised tools (Creswell & Creswell, 2018). Relationships between these variables are treated as statistically testable and generalisable, with the researcher maintaining detachment to prioritise measurable facts over subjective views (Saunders et al., 2019). Ontologically, a realist stance holds that social phenomena like network structures and cultural orientations exist objectively and exert real influence on organisational outcomes (Bryman, 2016). Axiologically, the study adopts value neutrality, ensuring that personal biases do not affect data processes, while upholding ethical standards such as confidentiality and informed consent (Kivunja & Kuyini, 2017). These assumptions collectively underpin a rigorous, evidence-based inquiry into how organisational culture moderates the link between social capital and business continuity. An explanatory research design is employed to investigate causal mechanisms, allowing hypothesis testing and quantification of how social capital affects business continuity, with organisational culture as a moderator (Creswell & Creswell, 2018). This design supports the use of regression and moderation analyses to establish cause-and-effect dynamics from empirical data (Saunders et al., 2019). By moving beyond description to explanation, it provides a structured pathway for generating generalisable insights applicable to enhancing resilience in agribusiness. A quantitative approach is central, facilitating the collection of numerical data from a large sample via structured questionnaires to capture perceptions of the key constructs (Bryman, 2016). This method enables precise pattern detection, correlation assessment and moderation analysis with minimal bias, supporting theory validation and practical recommendations for Ghanaian agribusinesses (Dehalwar & Sharma, 2024).

The target population consists of agribusiness owners, managers and entrepreneurs in vegetable farming across Ghana's Eastern, Northern and Volta regions, chosen for their prominence in vegetable production and value-chain activities. This includes producers, aggregators, processors, and distributors who play operational and managerial roles, providing a holistic view of how social networks, trust, and

cultural practices influence continuity amid disruptions. Inclusion criteria require participants to be directly engaged in decision-making within vegetable-focused agribusinesses operational for at least two years, aged 18 or older and willing to complete questionnaires fully. Exclusion criteria exclude non-vegetable agribusinesses, temporary or seasonal workers without formal roles, startups under 2 years old, incomplete respondents, and cooperatives lacking individual firm identity, thereby sharpening the focus on experienced, firm-level dynamics.

A sample of 220 respondents is selected to ensure statistical power and representativeness, exceeding the minimum of 200 cases recommended for Partial Least Squares Structural Equation Modeling (PLS-SEM) to yield robust parameter estimates (Hair et al., 2021). This sample size was not determined based on PLS requirements alone, but also in light of prior studies with similar sample sizes. For instance, Adams et al. (2021) used 100 farmers to examine marketing choices, while Abdulai et al. (2025) used 200 soybean farmers and found significant efficiency effects. Kwapong et al. (2021) also used a sample of 231 respondents and reported significant determinants of farm scale. These studies confirm that similar sample sizes are sufficient for robust empirical analysis in agribusiness research. This size accommodates potential data loss while supporting reliable hypothesis testing in Smart PLS. Multistage sampling is applied: first, the three regions are purposively selected as vegetable hubs; second, districts within these regions are randomly selected to ensure geographical balance; third, simple random sampling is used to identify qualified owners, managers, and staff. This hybrid technique balances relevance, representativeness, and bias reduction, ensuring that participants possess pertinent knowledge of the constructs under study.

Data collection relies on a structured questionnaire administered to agribusiness personnel, designed to yield quantitative insights into social capital, firm resilience, and business continuity. Scales are adapted from established sources: social capital from Kim and Shim (2018), firm resilience from Nkansah et al. (2024), and business continuity from Li et al. (2023). Items use a five-point Likert scale for consistency and analytical ease, enabling efficient, anonymous data gathering from many respondents while aligning with positivist goals (Saunders et al., 2019). Reliability is assessed using Cronbach's alpha and composite reliability, with targets of 0.70 or higher and validity is confirmed via convergent criteria (AVE > 0.50) and discriminant checks using the HTMT ratio in SmartPLS (Hair et al., 2021; Sarstedt et al., 2019). Leveraging validated scales further bolsters content validity, ensuring accurate representation of the construct.

The analysis employs SmartPLS to handle complex latent variable relationships and moderation effects. Initial data screening and coding occur in Microsoft Excel before importing into SmartPLS4. The measurement model undergoes reliability and validity evaluation via Cronbach's alpha, composite reliability, AVE, and discriminant validity tests (Hair et al., 2021). Upon validation, the structural model assesses hypothesized paths through path coefficients, R^2 values, and bootstrapped significance levels. The moderating role of firm resilience is examined using an interaction term, providing a thorough depiction of direct and indirect influences on business continuity. This PLS-SEM approach delivers

predictive accuracy and causal clarity, yielding empirically grounded conclusions for agribusiness resilience in Ghana.

Results and Discussion

Demographic Characteristics of Respondents

Table 1 presents the demographic characteristics of respondents, detailing their gender, educational background, years of farming experience, farm size and main internet-enabled devices. This information provides essential context for understanding the background of agribusiness participants involved in the study.

Table 1
Demographic Characteristics of respondents

Features	Description	Frequency	Percent
Gender	Male	164	74.5
	Female	56	25.5
Educational Qualification	Primary Education	69	31.4
	Secondary Education	118	53.6
	Tertiary Education	33	15
Years of Farming Experience	1 to 5 years	33	15
	6 to 10 years	98	44.5
	Above 10 years	89	40.5
Farm Size	1 to 3 acres	132	60
	4 to 6 acres	61	27.7
	Above 6 acres	27	12.3
Main internet enabled devices used	Smartphone	201	91.4
	Tablet	13	5.91
	Computers	7	3.18
Source; Field data (2025)			

The demographic characteristics of respondents indicate that the majority of participants were male (74.5%), while females comprised 25.5%, suggesting that vegetable farming in Ghana remains a male-dominated activity. In terms of educational qualification, most respondents had attained secondary education (53.6%), followed by primary education (31.4%), with a smaller proportion having tertiary

education (15%), implying that while literacy levels are moderate, higher education among farmers remains relatively low. Regarding farming experience, 44.5% of respondents had 6–10 years, 40.5% had more than 10 years, and 15% had 1–5 years, indicating that most participants were experienced farmers with substantial practical knowledge of agribusiness operations. The results also show that 60% of respondents operated farms between 1 to 3 acres, 27.7% cultivated 4 to 6 acres and only 12.3% managed farms above 6 acres, reflecting the dominance of small- to medium-scale farming. Additionally, the majority (91.4%) relied on smartphones as their main internet-enabled device, compared to tablets (5.91%) and computers (3.18%), demonstrating the widespread use of mobile technology as the primary digital tool for communication and business activities among agribusiness operators.

Measurement Model Assessment

The measurement model assessment as shown in Table 2, evaluates the reliability, convergent validity, and discriminant validity of the study constructs

Table 2
Indicator reliability and validity results

Measurement items	loading	Cronbach's alpha	CR (Rho_a)	CR (Rho_c)	AVE
Social Capital		0.839	0.846	0.879	0.511
CSC1	0.763				
CSC2	0.736				
CSC3	0.679				
RSC1	0.687				
RSC2	0.698				
RSC3	0.819				
SSC2	0.601				
Firm Resilience		0.866	0.867	0.900	0.601
FR1	0.773				
FR2	0.664				
FR3	0.797				
FR4	0.789				
FR5	0.803				
FR6	0.814				
Business Continuity		0.860	0.869	0.899	0.641
BC1	0.826				
BC2	0.865				
BC3	0.792				
BC4	0.795				
BC5	0.718				
Source: Smart PLS 4 Output (2025)					

The measurement model results indicate that all constructs, Social Capital, Firm Resilience, and Business Continuity, demonstrate satisfactory reliability and validity levels. Cronbach's alpha values range from 0.839 to 0.866, all exceeding the recommended minimum threshold of 0.7, which confirms internal consistency among the items measuring each construct. Similarly, composite reliability (CR) values for both rho_a and rho_c are above 0.8, further supporting the reliability and consistency of the measurement scales. The average variance extracted (AVE) values for all constructs fall between 0.511

and 0.641, which surpass the acceptable threshold of 0.5, indicating adequate convergent validity, which implies that the items within each construct sufficiently explain the variance of their respective latent variables.

The factor loadings for most indicators are above 0.6, suggesting that individual measurement items have strong relationships with their underlying constructs. Although a few items, such as SSC2 (0.601) and RSC1 (0.687), are relatively lower, they still fall within acceptable limits for exploratory studies, demonstrating that the items contribute meaningfully to the constructs they represent. Overall, the measurement model results suggest that the study's constructs are both reliable and valid, forming a solid foundation for further structural model analysis to examine the hypothesized relationships among Social Capital, Firm Resilience, and Business Continuity.

Table 3 presents discriminant validity measured with Heterotrait–Monotrait (HTMT) and Fornell-Lacker criterion for the study constructs.

Table 3
Discriminant Validity

	HTMT		
	Business Continuity	**Firm Resilience**	**Social Capital**
Business Continuity			
Firm Resilience	0.771		
Social Capital	0.681	0.852	
Firm Resilience x Social Capital	0.420	0.488	0.533
	Fornell-Lacker		
Business Continuity	0.801		
Firm Resilience	0.676	0.775	
Social Capital	0.597	0.733	0.715
Source: Smart PLS 4 Output (2025)			

The discriminant validity results in Table 3 indicate that the study constructs are distinct and well-differentiated from one another. The Heterotrait–Monotrait (HTMT) ratios among the constructs are all below the conservative threshold of 0.85, with values ranging from 0.420 to 0.852, confirming that each construct measures a distinct concept with minimal overlap.

Similarly, the Fornell-Larcker criterion shows that the square roots of the AVE (diagonal values) are higher than the corresponding inter-construct correlations in their respective rows and columns. This pattern provides additional evidence of discriminant validity, suggesting that Business Continuity, Firm

Resilience, and Social Capital are empirically distinct constructs in the measurement model. Hence, the results affirm that Figs. 2 and 3 have adequate discriminant validity, enabling reliable interpretation of relationships among the constructs in subsequent analyses.

Structural model assessment

The structural model assessment evaluates the study model by considering both the predictive relevance of the constructs and the path coefficients from hypothesis testing. It examines the explanatory power, effect sizes, and significance of the direct and moderated relationships among social capital, organisational culture, and business continuity in agribusinesses.

Table 4 presents the effect sizes (f^2) and variance inflation factors (VIF) for the relationships among the study constructs in the structural model, with the rationale of assessing the relative contribution of each predictor to the endogenous variables and examining potential multicollinearity issues that may affect the stability of the model estimates.

Table 4
Effect Sizes and Multicollinearity

Relationship	**VIF**	**f^2 (Effect Size)**
Firm Resilience → Business Continuity	2.223	0.216
Social Capital → Business Continuity	2.303	0.032
Social Capital → Firm Resilience	1.000	1.161
Social Capital × Firm Resilience → Business Continuity	1.343	0.009

The results show that all VIF values are below the threshold of 5, indicating no multicollinearity problems among the predictor constructs. Firm resilience has a medium effect on business continuity ($f^2 = 0.216$), suggesting it is a key determinant of continuity outcomes. Social capital has a small direct effect on business continuity ($f^2 = 0.032$), indicating a weaker but meaningful contribution. The interaction term (Social Capital × Firm Resilience) shows a negligible effect ($f^2 = 0.009$), implying a very weak moderating influence.

Table 5 presents the explanatory power and predictive relevance of the structural model for the endogenous constructs.

Table 5
Explanatory Power and Predictive Relevance

Endogenous Construct	**R^2**	**Adjusted R^2**	**Q^2**
Business Continuity	0.484	0.335	0.335
Firm Resilience	0.537	0.517	0.517

The R^2 values indicate that Social Capital and Firm Resilience jointly explain 48.4% of the variance in Business Continuity and 53.7% of the variance in Firm Resilience, suggesting moderate explanatory strength. The adjusted R^2 values of 0.335 and 0.517 further confirm that the model maintains acceptable explanatory power after adjusting for the number of predictors. The Q^2 values, both above zero, demonstrate that the model has adequate predictive relevance for Business Continuity and Firm Resilience.

Model fitness

Table 6 presents the model fit indices for both the saturated and estimated models, assessing how well the proposed structural model fits the observed data. These indices indicate the adequacy and reliability of the model in representing the relationships among the study constructs.

Table 6
Summary of Model Fit

SRMR	**Saturated model**	**Estimated model**
	0.087	**0.085**
d_ULS	1.283	1.247
d_G	0.516	0.516
Chi-square	447.070	439.378
NFI	0.734	0.739
Source: Authors' construction (2025)		

The model fitness results in Table 6 indicate that the proposed structural model demonstrates an acceptable fit with the observed data. The Standardized Root Mean Square Residual (SRMR) values of 0.087 and 0.085 for the saturated and estimated models, respectively, fall within the acceptable threshold of less than 0.10, suggesting a good approximation between the predicted and observed correlations. The d_ULS and d_G values are relatively low and consistent across both models, confirming minimal discrepancies between the empirical and model-implied covariance matrices. Additionally, the Normed Fit Index (NFI) values of 0.734 and 0.739, though slightly below the ideal benchmark of 0.9, still indicate a reasonable model fit for exploratory research. The Chi-square values are moderate and similar across models, indicating stability in estimation. Therefore, these indicators collectively confirm that the model fits the data adequately and reliably represents the relationships among the study constructs.

Path coefficient and hypothesis test results

Table 7 presents the results of the hypothesis testing for both direct and moderated relationships among social capital, organizational culture, and business continuity. The table provides standardised beta coefficients, t-values and significance levels, indicating the strength and significance of the proposed relationships in the study model.

Table 7
Hypothesis test results

Structural Relationship	Hypotheses	Beta (β)	t	p	Decision
Direct Effects:					
Social Capital → Business Continuity	H1	0.195	3.718	0.128	Not Supported
Firm resilience → Business Continuity	H2	0.498	14.524	0.000	Supported
Social Capital → Firm Resilience	H3	0.733	13.810	0.000	Supported
Moderation effect:					
Firm Resilience x Social Capital → Business Continuity	H4	-0.029	11.781	0.032	Supported
Source: Authors' construction (2025)					

The results in Table 7 reveal that three of the four hypothesised relationships are statistically significant. The direct relationship between Social Capital and Business Continuity (H1) is not supported (β = 0.195, t = 3.718, p = 0.128). But the relationship between Firm Resilience and Business Continuity (H2) is supported (β = 0.498, t = 14.524, p = 0.000). Social Capital and Firm Resilience (H3) is also supported (β = 0.733, t = 13.810, p = 0.000) just as the moderating effect of Firm Resilience on the relationship between Social Capital and Business Continuity (H4) (β = − 0.029, t = 11.781, p = 0.032).

Discussion of Findings

The first objective of the study was to examine the effect of social capital on business continuity among agribusinesses. Contrary to expectations, the findings revealed that social capital does not have a statistically significant effect on business continuity, indicating that strong social networks, trust, and collaboration among agribusiness stakeholders do not directly translate into enhanced operational sustainability or recovery from disruptions. Thus, the hypothesis proposing that higher levels of social capital contribute to improved business continuity was not supported. Although social capital is often assumed to foster coordination and access to resources, empirical results show that these relational assets alone are insufficient to ensure business continuity in the agribusiness sector. This finding diverges from studies such as Nyarku (2024) and Boateng et al. (2024), who reported significant positive effects of social capital on organisational performance and knowledge acquisition in Ghanaian firms. It also contrasts with Wibowo et al. (2022) and Salisu et al. (2019), who found that bonding social capital enhances entrepreneurs' resilience to external shocks. These inconsistencies suggest that in some contexts, including agribusiness, social ties may not directly influence continuity outcomes. The divergence from Appiah-Gyimah and Boohene (2019) remains relevant, as overly informal or familial networks may fail to translate into strategic continuity outcomes. From a theoretical perspective, the

insignificance of H1 nuances Network Theory and Dynamic Capabilities Theory by showing that access to relationships alone may not guarantee continuity unless combined with other enabling capabilities.

The second objective was to assess the effect of firm resilience on business continuity. The findings indicate that firm resilience has a significant positive effect on business continuity, supporting the hypothesis and highlighting resilience as a key determinant of agribusiness operational stability. This confirms that firms with adaptive capacities, such as flexible routines, learning mechanisms, and crisis preparedness, are better able to maintain operations during disruptions. This result aligns with prior studies, including Buzzao and Rizzi (2023), Ama et al. (2022), Ge et al. (2022), and Wamalwa and Ochola (2022), all of which found resilience to be a strong predictor of continuity across diverse business environments. These consistencies reinforce the centrality of resilience in sustaining firms' operational performance during crises. Theoretically, these findings support Dynamic Capabilities Theory, which highlights resilience as a core adaptive capability. Practically, they emphasise the need for agribusiness managers and policymakers to invest in resilience-building initiatives such as crisis training, operational flexibility, and recovery planning.

The third objective examined the effect of social capital on firm resilience among Ghanaian agribusinesses. The finding shows that social capital significantly influences firm resilience among agribusinesses, implying that firms that maintain strong networks, trust and cooperative relationships with stakeholders are better able to withstand disruptions and adapt to changing conditions in the agricultural sector. In agribusiness environments where uncertainties such as climate variability, supply chain disruptions, and market fluctuations are common, social relationships provide access to information, resources, and collaborative support that strengthen firms' capacity to respond to shocks. This result is consistent with several empirical studies reviewed in literature. For instance, Jia et al. (2020) found that structural and relational social capital significantly enhance proactive and reactive resilience among firms facing disruptions. Similarly, Khoa et al. (2021) reported that firms with strong social capital demonstrate higher resilience due to improved collaboration and communication with partners. Ozanne et al. (2022) also indicate that social networks support firms in sensing opportunities and reconfiguring resources to adapt during crises. Evidence from Ghana further supports this outcome, as Dadzie (2025) and Essuman et al. (2024) show that social capital enables organisations to access resources and manage operational stressors, thereby strengthening resilience. The result aligns with Network Theory, which highlights the importance of relational ties in accessing valuable resources and Dynamic Capabilities Theory, which explains how firms utilise these networks to adapt and reconfigure capabilities in response to environmental uncertainties affecting agribusinesses.

The fourth objective was to determine the moderating effect of firm resilience on the relationship between social capital and business continuity. The result shows that moderating effects are statistically significant. But its coefficient is negative ($\beta = -0.029$), indicating that although firm resilience significantly moderates the relationship between social capital and business continuity, it weakens rather than strengthens this effect. The finding that firm resilience significantly moderates but weakens the relationship between social capital and business continuity partly aligns with and partly contradicts the

existing empirical literature. Studies such as Acquah et al. (2024) support the current finding to some extent because they indicate that the influence of social capital on firm outcomes is not always direct but operates through other mechanisms, such as responsiveness, suggesting that its effect may diminish when stronger organisational capabilities exist. However, several studies contradict the present result by showing that resilience strengthens the influence of social capital on continuity outcomes.

For instance, Danso et al. (2024), Mensah (2024), and Essuman et al. (2024) report that resilient firms are better able to leverage social relationships and networks to sustain operations during disruptions. Similarly, international studies by Ozanne et al. (2022), Chowdhury et al. (2024), and Hurtado and Herrero (2024) show that resilience enhances the effectiveness of relational and social capital in maintaining organisational stability and performance. From a theoretical perspective, Network Theory generally contradicts negative moderation, as it posits that strong relational networks should complement internal capabilities, such as resilience, to improve firm outcomes. Likewise, Dynamic Capabilities Theory largely suggests that resilience should strengthen the value of social capital by enabling firms to reconfigure resources and adapt to disruptions, meaning the observed weakening effect may reflect contextual factors within agribusiness environments.

Practical Implications

The findings suggest that agribusiness managers should not rely solely on social relationships and networks to ensure business continuity. Although social capital fosters cooperation and information exchange, it does not directly guarantee operational stability. Agribusiness owners should therefore complement their networks with structured business continuity strategies such as contingency planning, risk management systems, and operational monitoring to sustain performance during disruptions.

The significant effect of firm resilience on business continuity highlights the need for agribusiness firms to develop strong adaptive capacities. Managers should invest in training, flexible operational systems, and crisis preparedness programs that enable firms to respond effectively to unexpected events such as climate variability, supply chain disruptions, and market volatility.

The results also indicate that social capital plays a critical role in strengthening firm resilience. Agribusiness stakeholders should therefore encourage partnerships, cooperative associations, and knowledge-sharing platforms that facilitate collaboration and collective problem-solving among farmers, suppliers, and distributors.

Again, policymakers and development agencies supporting the agricultural sector should prioritize resilience-building initiatives. Policies that promote agribusiness training, access to information, and institutional support can enhance firms' ability to transform social networks into practical capabilities that sustain operations during economic and environmental shocks.

Theoretical Implications

The findings provide important implications for the theoretical understanding of the relationship between social capital, firm resilience, and business continuity. The result that social capital does not significantly influence business continuity directly suggests that the assumptions of Network Theory may require contextual interpretation. While Network Theory emphasizes that relational ties provide access to resources and information, the findings indicate that such networks alone may not be sufficient to sustain operations in agribusiness environments unless they are complemented by internal organizational capabilities.

The strong positive effect of firm resilience on business continuity reinforces the central proposition of Dynamic Capabilities Theory. The finding demonstrates that firms that develop adaptive capabilities such as flexibility, learning, and preparedness are better positioned to maintain operations during disruptions. This supports the theoretical view that dynamic capabilities enable organisations to respond effectively to uncertain and rapidly changing environments.

The significant influence of social capital on firm resilience strengthens the theoretical linkage between Network Theory and Dynamic Capabilities Theory. The result suggests that relational resources embedded in networks contribute to the development of adaptive capabilities by facilitating access to knowledge, collaboration, and resource mobilisation.

The negative moderating effect of firm resilience on the social capital–business continuity relationship introduces a nuanced theoretical insight. It suggests that as firms develop stronger internal resilience capabilities, direct reliance on social networks for continuity may diminish. This finding extends both theories by indicating that internal adaptive capacities may substitute for or reduce dependence on external relational resources in certain contexts, particularly within agribusiness environments characterised by structural and operational uncertainties.

Limitations and Future Research Directions

The cross-sectional design captures relationships at a single point in time, limiting causal inferences and the ability to observe how social capital, resilience, and continuity evolve. Reliance on self-reported survey measures introduces potential common method bias and social desirability bias, especially for constructs such as trust and network strength. The sample is limited to Ghanaian agribusinesses, restricting generalisability to other sectors, firm sizes, or regions with different institutional environments. Contextual factors specific to Ghana, such as weak formal institutions and reliance on informal networks, may suppress or alter the observed effects, particularly the non-significant link between social capital and resilience. Based on the stated limitations, it was recommended that future researchers should;

1. Adopt longitudinal or panel designs to track changes in social capital, resilience, and business continuity across pre-disruption, disruption, and recovery phases.
2. Employ mixed-methods approaches, integrating quantitative surveys with qualitative case studies, in-depth interviews, or objective social network analysis (e.g., communication logs, transaction data)

to validate self-reports and capture relational dynamics.
3. Replicate the study in diverse sectors (e.g., manufacturing, retail, services) and regions (e.g., East Africa, Southeast Asia) to test the generalisability and boundary conditions of the findings.
4. Investigate additional moderators and mediators such as digital infrastructure, entrepreneurial orientation, institutional quality, or cultural values to explain variations in how resilience activates social capital.

Declarations

Declaration of Interest statement

The author declares no potential conflicts of interest regarding this study's research, authorship, or publication.

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Authors' contribution:

: Conceptualisation, data curation, discussions, and assisted in the literature review sections.

: Supervision, methodology, theoretical review

: Data analysis, discussions, and assisted in methodology

: Referencing, editing, and discussion

Approval: The author has read and approved the final manuscript and agreed to its submission for publication.

Data availability statement: Data supporting the findings of this study are available via the repository link below, including the raw dataset, processed dataset, survey instruments, and code. Find link here; https://shorturl.at/tbTlZ

Ethics Approval: Approval was obtained from the University of Education, Winneba. The procedures used in this study adhere to the principles outlined in the Declaration of Helsinki. The questionnaire and methodology for this study were approved by the University's Research Committee (Ethics approval number: *xe104136*). Oral informed consent was obtained from all individual participants included in the study. Additionally, the study adhered to ethical research standards throughout data collection and analysis. Participation was voluntary, and respondents were informed of the study's purpose, the

confidentiality of their responses, and their right to withdraw at any stage. All data were stored securely and used solely for academic purposes.

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Figures

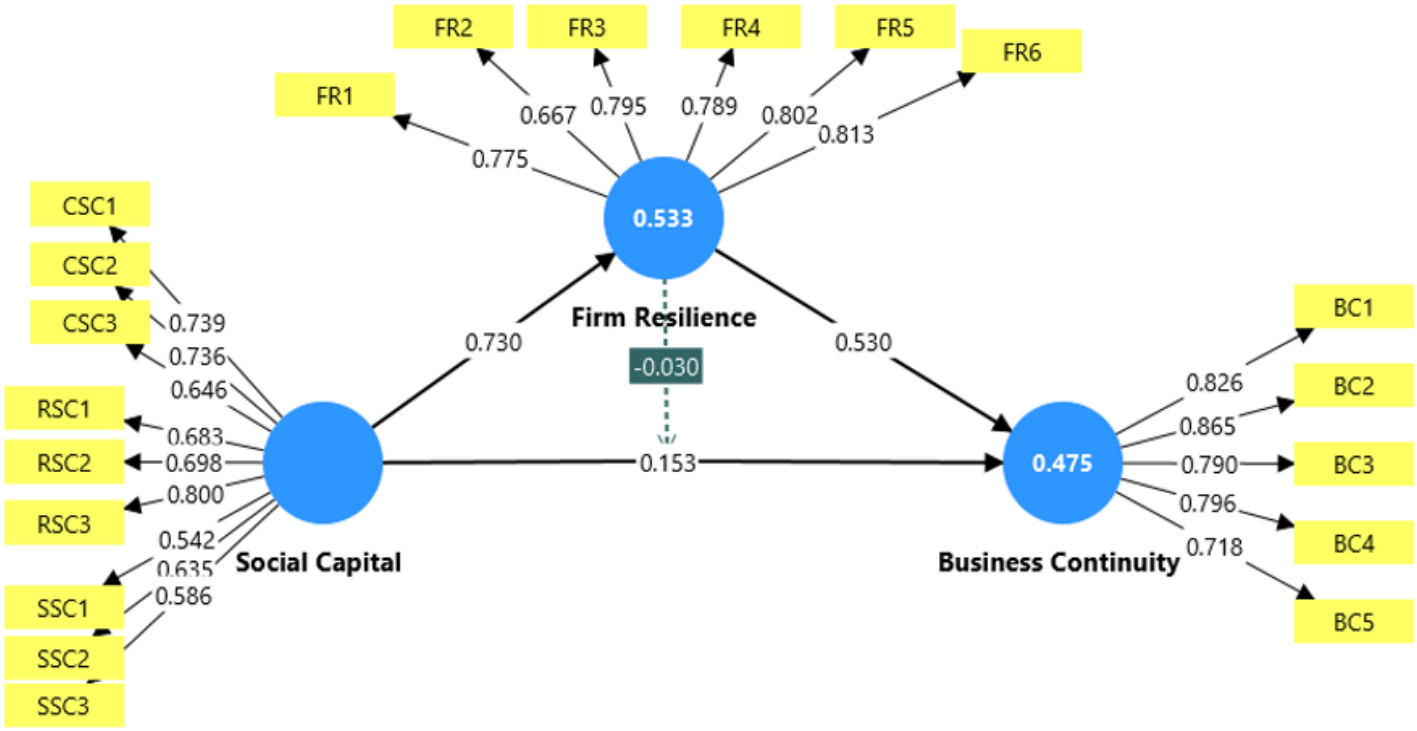


Figure 1

Figure 2: Measurement Model Output

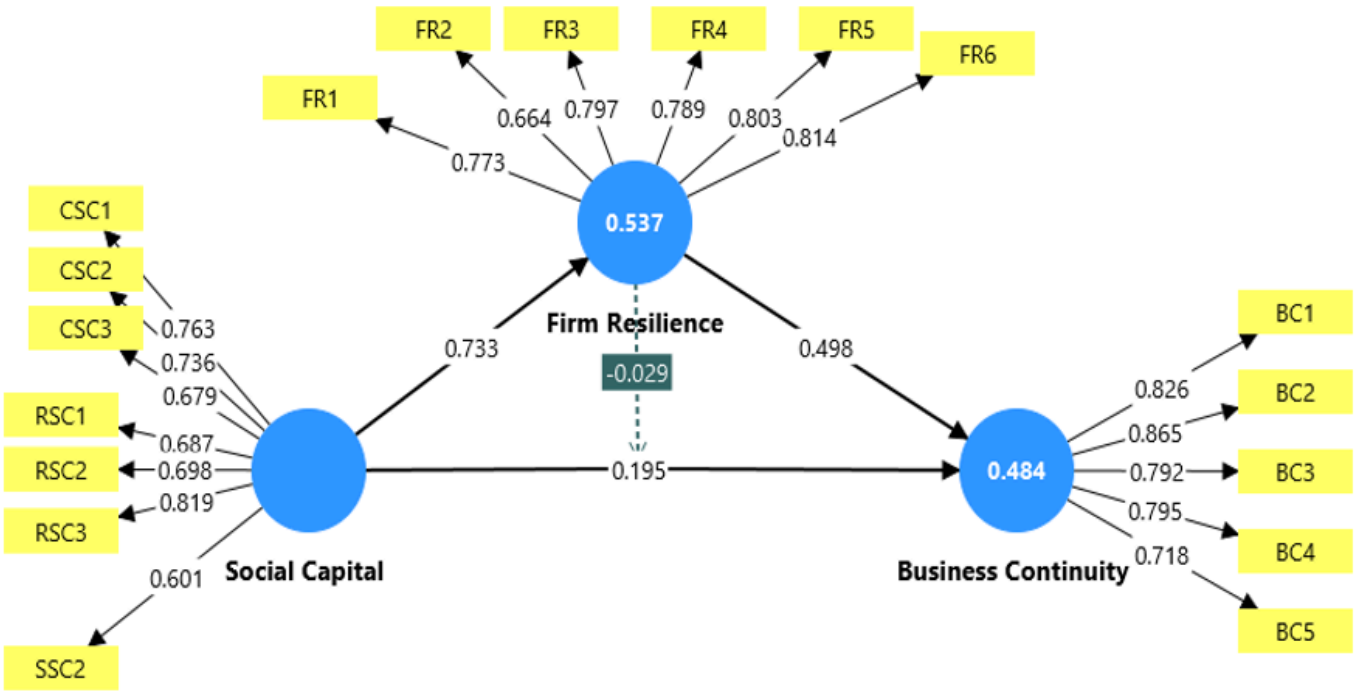


Figure 2

Figure 3: Improved measurement Model Output