Innovations

Agile Budgeting and Corporate Resilience: Evidence from Strategic Budgetary Innovation among Nigerian Listed Companies

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Abstract: *This study investigates the relationship between agile budgeting and corporate resilience, with emphasis on strategic budgetary innovation among Nigerian listed companies. In an environment marked by economic volatility, regulatory uncertainty, and stakeholder pressures, firms often face challenges in embedding resilience into financial and operational systems. Weaknesses in budgeting processes and inefficient allocation of resources have constrained the ability of Nigerian firms to sustain long-term performance and adapt to disruptions. Drawing on survey data from 334 respondents across 109 listed companies and analysed using structural equation modelling (Smart PLS), the findings show that agile budgeting exerts a positive and significant effect on corporate resilience ($\beta = 0.151$, $p = 0.012$), while resource allocation efficiency demonstrates the strongest influence ($\beta = 0.375$, $p < 0.000$). Further, the combined effect reveals that agile budgeting enhances resilience indirectly by strengthening resource allocation systems, indicating a mediated relationship. The study concludes that strategic budgetary innovation, through the integration of flexibility and efficient resource deployment, is a critical enabler of resilience in Nigerian firms. It is recommended that managers institutionalize agile budgeting practices, strengthen resource allocation mechanisms to support both core and CSR initiatives, and align budgeting systems with adaptive strategies to balance financial performance with long-term sustainability.*

Keywords: *Agile Budgeting, Corporate Resilience, Strategic Budgetary Innovation, Resource Allocation Efficiency, Nigerian Listed Companies.*

1. Introduction

Modern organizations operate in environments characterized by volatility, uncertainty, complexity, and ambiguity (VUCA), where disruptions increasingly challenge firms' survival and competitiveness (Bennett & Lemoine, 2014). Firms are continuously exposed to shocks such as economic downturns, regulatory shifts, intense market competition, and technological transitions (Deloitte, 2020; Aven, 2015). These realities make corporate resilience a critical capability. Resilience, in this context, refers to a firm's ability to withstand, adapt, and thrive despite environmental uncertainty (Lengnick-Hall*et al.,*2011; Hillmann & Guenther, 2021).Budgeting, long

perceived as a static control mechanism, is now evolving into a strategic instrument for resilience (Otley, 2016). Among the emerging practices, agile budgeting; characterized by flexibility, rapid reforecasting, and continuous adjustment; has become particularly relevant (Becker, 2014; Apaydin, 2021). By enabling swift responses to shocks, agile budgeting fosters organizational resilience and strategic adaptability (Mahohoma & Boschetti, 2025). The role of digital transformation and rapid adaptation is also vital, as organizations increasingly embed digital systems into financial management processes, enabling real-time data analysis, scenario planning, and dynamic resource allocation (Appelbaum*et al.,* 2017; Brynjolfsson & McAfee, 2017). These enablers strengthen the link between agile budgeting and resilience by ensuring firms are both flexible and resource-efficient. This paper therefore investigates how agile budgeting and resource allocation efficiency contribute to corporate resilience among Nigerian listed companies, drawing from a dataset developed for a broader PhD study on strategic budgetary innovation.

Research Questions

- What is the effect of Agile Budgeting on Corporate Resilience among listed companies in Nigeria?
- How does Resource Allocation Efficiency influence Corporate Resilience?
- To what extent do Agile Budgeting and Resource Allocation Efficiency jointly explain Corporate Resilience among listed companies in Nigeria?

2. Literature Review

a. Traditional Budgeting and Its Limitations

Conventional budgeting systems prioritize control, stability, and performance measurement. However, these systems often suffer from rigidity, excessive reliance on historical data, and inability to accommodate sudden shocks. In emerging economies, such rigid practices exacerbate vulnerability to external disruptions (Becker &Lukka, 2020; Ekholm & Wallin, 2011).

b. Corporate Resilience

Corporate resilience is theoretically conceptualized as the capacity of firms to withstand disruptions, maintain functionality, and sustain continuity over time (Duchek, 2020; Linnenluecke, 2017). In this study, Corporate Social Responsibility Initiatives (CSI) were adopted as the empirical proxy for corporate resilience. Prior evidence shows that CSR practices strengthen resilience pathways through stakeholder protection, continuity preservation, legitimacy reinforcement, reputation insurance, and sustainability-oriented governance (Ortiz-de-Mandojana & Bansal, 2016). Therefore, CSR activities reflect long-term strategic responses that enable firms to endure shocks and restore performance stability. This provides theoretical justification for using CSI as valid resilience representation, particularly in emerging economies where socially responsible practices have been shown to drive organizational endurance more strongly than internal structural efficiency indicators.

c. Agile Budgeting as Strategic Innovation

Agile budgeting emphasizes adaptability, speed, and alignment with dynamic goals. Unlike traditional static budgets, agile budgets allow firms to adjust rapidly to market shifts. Prior studies have shown that agile budgeting strengthens decision-making, minimizes resource wastage, and increases organizational learning (Hansen *et al.,* 2003). In uncertain environments, this flexibility directly supports resilience. Agile budgeting draws inspiration from agile project management and adaptive planning (Libby & Lindsay, 2010). Key features include: Rolling forecasts replacing fixed annual budgets; Scenario analysis for multiple environmental outcomes; Iterative resource allocation aligned with real-time performance data and Decentralized decision-making enabling rapid response. In global literature, agile budgeting has been linked to improved corporate agility, resilience, and sustainability (Li *et al.,* 2023; Adeniji & Ige, 2022). However, empirical studies on its adoption in African contexts remain sparse.

d. Resource Allocation Efficiency

Efficient allocation of resources ensures that firms balance competing priorities and deploy resources where they yield maximum value. Resource allocation efficiency complements agile budgeting, as both practices enhance corporate resilience by ensuring that scarce resources are not locked into rigid plans (Ofoegbu & Eze, 2020; Akinyele & Fasogbon, 2010).

e. Digital Transformation and Rapid Adaptation

The integration of digital technologies into budgeting processes enhances the agility-resilience connection. Tools such as enterprise resource planning (ERP), cloud-based financial systems, and predictive analytics allow managers to reforecast quickly and adapt resource flows in real time (Hiebl & Richter, 2018). This digital transformation underpins rapid adaptation, enabling firms to sense, interpret, and respond to environmental uncertainty effectively (Li *et al.,* 2023; Sebastian *et al.,* 2017; Teece *et al.,* 2016). Although this study does not empirically test digital transformation as a variable, the literature suggests that its presence strengthens the ability of agile budgeting to foster resilience. In essence, digital tools act as enablers of budgeting innovation, amplifying the firm's resilience capacity.

f. Theoretical Framework

This study is anchored on Dynamic Capabilities Theory as the core explanatory foundation and Contingency Theory as the boundary condition logic. Dynamic Capabilities Theory explains how firms develop, renew, and reconfigure strategic processes for sustained long-term advantage, while Contingency Theory reinforces that the performance value of strategic budgeting practices is context dependent and becomes more effective where there is strong environmental fit.

i. Dynamic Capabilities Theory

The Dynamic Capabilities Theory posits that organizations achieve sustained advantage by developing higher-order capabilities that enable them to sense, seize, and transform resources in response to environmental volatility (Eisenhardt & Martin, 2000; Teece *et al.,* 1997). In the context of budgeting decisions, dynamic capability does not only reflect the ability to plan; it reflects the organization's capacity to continuously renew and reconfigure budgeting routines, resource deployment, and operational choices in real time. Agile budgeting represents an applied expression of dynamic capability because it supports rapid financial reallocation, flexible scenario experimentation, and continuous strategic adjustment in response to dynamic internal and external pressures. Through agile budgeting, firms are able to reduce information lag, accelerate decision turnaround, minimize budget rigidity, and strengthen resilience to shocks. Dynamic capability is conceptualized across three sub-capabilities. Absorptive capability represents the ability of the firm to internalize knowledge, learn from internal process feedback loops, and embed continuous improvement practices. Adaptive capability reflects the firm's capacity to modify processes, optimize cost structures, and realign operational routines as contextual demands shift. Recovery capability explains the ability of the organization to return to stability after shocks, disruptions, or resource depletion through structured stabilization strategies and rebound mechanisms. Together, absorptive capability, adaptive capability, and recovery capability jointly represent the operational form of dynamic capabilities that transform agile budgeting practices into resilience outcomes. Corporate resilience is therefore conceptualized as an outcome of effective deployment of these dynamic capabilities. When firms internalize dynamic learning (absorptive), reconfigure processes in real time (adaptive), and regain stability after disruption (recovery), agile budgeting becomes a strategic budgetary innovation pathway capable of strengthening resilience among listed companies in Nigeria. This aligns with evidence suggesting that dynamic capability deployment is enhanced when budgeting becomes iterative, digital-enabled, and continuously reconfigurable (Li *et al.,* 2023; Kane *et al.,* 2015).

ii. Contingency Theory

Contingency Theory asserts that no single managerial practice or control system is universally superior; rather, the effectiveness of any organizational practice depends on how well it aligns with specific environmental, structural, and contextual conditions (Burns & Stalker, 1961; Otley, 1980).Under conditions of environmental turbulence, volatile macroeconomic conditions, and uncertainty, flexible adaptive budgeting systems outperform rigid, traditional systems. Contingency arguments reinforce that the adoption of agile budgeting and the deployment of digital, real-time support tools provide superior performance advantages when environmental uncertainty is high, thereby strengthening corporate resilience by ensuring better contextual fit in unstable environments. Therefore, agile budgeting supported with digital tools offers better contextual fit and superior performance outcomes by enabling rapid adjustment of financial decisions and strategic responses (Hitt*et al.,* 1998).

4. Methodology

The study employed a quantitative survey design using structured questionnaires administered to finance managers, accountants, and strategic planning officers of Nigerian listed companies. From the population of firms on the Nigerian Exchange Group, 334 valid responses were obtained across manufacturing, banking, telecommunications, and service sectors, providing an adequate sample size for structural equation modelling (Hair *et al.,* 2019).Agile Budgeting (AGB) was measured through financial flexibility, budget responsiveness, iterative cycles, adaptive management, and timely reallocation, while Resource Allocation Efficiency (RAE) was assessed using resource utilization, allocation optimization, dynamic allocation, cost control, and program prioritization. Corporate Resilience construct was conceptually defined based on three capability dimensions (absorptive, adaptive, recovery), but operationalized empirically using Corporate Social Responsibility Initiatives (CSI) as resilience proxy because these items demonstrated higher empirical reliability in the Nigerian context. Three hypotheses were formulated to test the individual and joint effects of AGB and RAE on CPR. Partial Least Squares Structural Equation Modelling (PLS-SEM) was adopted as the analytical technique due to its suitability for predictive and causal analysis of complex latent constructs (Hair *et al.,* 2022; Chin, 2010). The analysis followed a two-step approach: first, the measurement model was evaluated for reliability and validity using factor loadings, Cronbach's alpha, composite reliability, and average variance extracted (AVE), with items below the 0.70 threshold removed (Henseler*et al.,*2015). Second, the structural model was assessed to test the hypothesized relationships through path coefficients, t-statistics, and p-values generated via bootstrapping. This approach provided robust empirical evidence on how agile budgeting and efficient resource allocation contribute to corporate resilience among Nigerian listed companies.

5. Results

a. Confirmatory Factor Analysis

The measurement model in table 4.1 presented indicates that the retained constructs exhibit acceptable levels of factor loadings, reflecting their reliability and convergent validity. For the Agile Budgeting (AGB) construct, four indicators were retained, all loading above the recommended minimum threshold of 0.70, with standardized loadings ranging from 0.785 to 0.844. According to Hair *et al.* (2022), indicators with loadings falling below 0.70 weaken construct reliability and should be eliminated during the purification process. Therefore, AB1 was removed because it did not meet this minimum requirement. Its exclusion was theoretically and statistically justified to strengthen convergent validity and maintain measurement integrity (Fornell & Larcker, 1981). For the Resource Allocation Efficiency (RAE**)** construct, five items were retained, with factor loadings ranging between 0.747 and 0.836. This indicates strong convergence and internal consistency, with all indicators demonstrating satisfactory reliability. The high loadings show that the measures employed adequately capture the construct of efficiency in allocating resources, which aligns with the operational

definition adopted in this study. The construct of Corporate Resilience (CPR) was proxied using corporate social responsibility initiatives, with the loadings ranging from 0.759 to 0.855.

Table 4.1 Factor Indicator Loadings

Construct	Factor Indicator Loadings					Threshold/Decision
	Q1	Q2	Q3	Q4	Q5	
Agile Budgeting (AGB)	-	0.785	0.809	0.844	0.791	All ≥ 0.70 → Acceptable
Resource Allocation Efficiency (RAE)	0.747	0.812	0.836	0.818	0.751	All ≥ 0.70 → Acceptable
Corporate Resilience (CPR)	0.855	0.759	0.853	0.818	0.808	All ≥ 0.70 → Acceptable

Source: Researcher's computation (SmartPLS-SEM, 2025)

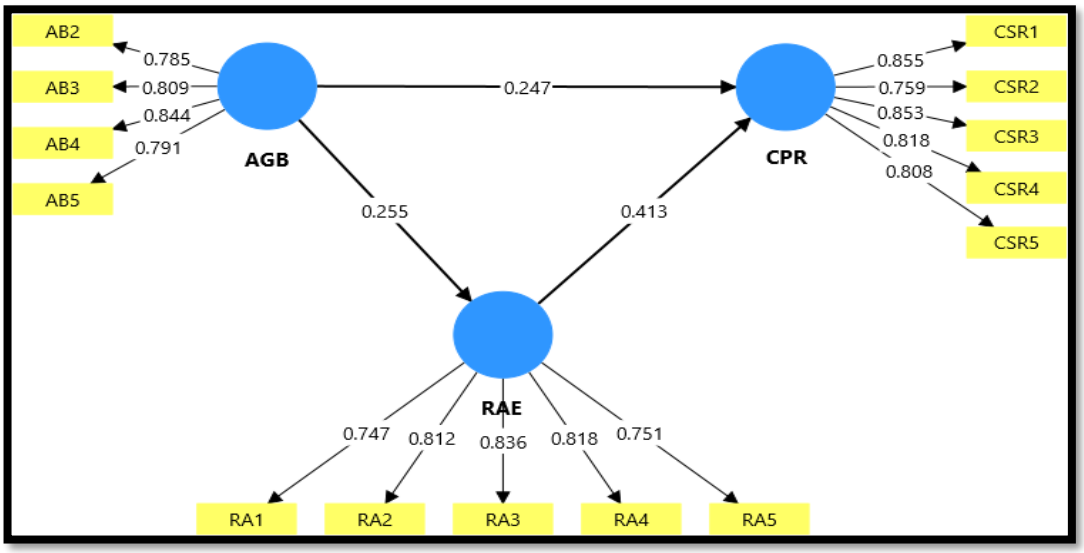

Figure 4.1 Factor Loadings and Correlations

b. Reliability and Convergent Validity

The measurement model in table 4.2 demonstrated strong reliability and convergent validity across the constructs. For Agile Budgeting (AGB), Cronbach's alpha (0.824), composite reliability (ρc = 0.882), and rho_A (0.838) all exceeded the recommended threshold of 0.70, indicating high internal consistency. The Average Variance Extracted (AVE) was 0.652, surpassing the benchmark of 0.50 and confirming convergent validity. Similarly, Resource Allocation Efficiency (RAE) achieved Cronbach's alpha of 0.854, rho_A of 0.867, and composite reliability of 0.895, all well above the acceptable standard. Its AVE of 0.630 further confirms the adequacy of the construct measurement. Corporate Resilience (CPR) also met the reliability and validity criteria, with Cronbach's alpha of 0.877, rho_A of 0.885, composite reliability of 0.911, and AVE of 0.672. These results indicate that the items used to operationalize the three constructs are internally consistent and sufficiently capture the latent dimensions of the constructs.

Table 4.2 reliability and convergent validity

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
AGB	0.824	0.838	0.882	0.652
CPR	0.877	0.885	0.911	0.672
RAE	0.854	0.867	0.895	0.630

Source: Researcher's computation (SmartPLS-SEM, 2025)

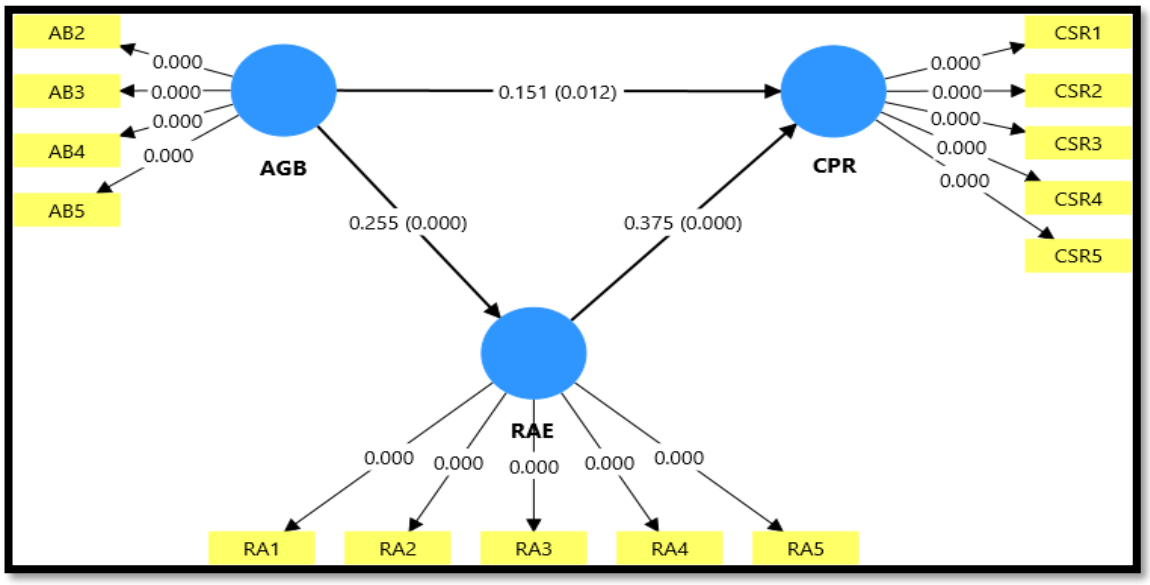

Figure 4.1 Path coefficient and P-value

Table 4.4 Path coefficient

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
AGB -> CPR	0.151	0.150	0.060	2.518	0.012
AGB -> RAE	0.255	0.265	0.064	4.016	0.000
RAE -> CPR	0.375	0.384	0.059	6.348	0.000

Source: Researcher's computation (SmartPLS-SEM, 2025)

The structural model results in table 4.4 provide evidence supporting the hypothesized relationships. Agile Budgeting (AGB) had a positive and significant effect on Corporate Resilience (CPR), with a path coefficient of 0.151 (t = 2.518, p = 0.012). This finding indicates that flexibility and adaptability in budgeting processes contribute positively to firm resilience, though the magnitude of the effect is modest. AGB also had a stronger positive influence on Resource Allocation Efficiency (RAE), with a coefficient of 0.255 (t = 4.016, p < 0.000), signifying that agile budgeting enhances the efficient deployment of resources across organizational activities. Resource Allocation Efficiency (RAE) exhibited the strongest effect on Corporate Resilience (CPR), with a coefficient of 0.375 (t = 6.348, p < 0.000). This finding suggests that firms that allocate resources efficiently are better positioned to maintain

resilience in the face of environmental uncertainties. The results therefore highlight RAE as a critical driver of resilience in Nigerian listed firms. The significant direct and mediated paths imply that agile budgeting enhances resilience not only directly but also by improving the efficiency with which resources are allocated, thereby strengthening the firm's ability to withstand external shocks.

c. Discussion of Findings

Objective One examined the effect of Agile Budgeting (AGB) on Corporate Resilience (CPR). Results showed a positive and significant relationship ($\beta = 0.151$, $t = 2.518$, $p = 0.012$), indicating that adaptive budgeting enhances resilience by allowing firms to adjust financial plans to environmental changes. Though modest in size, the effect was consistent with the study of Becker (2014), who argued that budgeting innovations work best when embedded in adaptable systems. Likewise, Apaydin (2021), emphasized that agile practices as a driver of responsiveness and resilience. Thus, Objective One was achieved. Objective Two investigated the influence of Resource Allocation Efficiency (RAE) on CPR. Findings revealed the strongest effect ($\beta = 0.375$, $t = 6.348$, $p < 0.000$), confirming that efficient resource deployment is vital for sustaining resilience and building legitimacy in uncertain contexts. This aligns with Chenhall (2003), who stressed the contingency-fit of control systems, and Obieze*et al.,*(2024), who showed Nigerian firms with efficient budgeting outperform peers in resilience. Therefore, Objective Two was achieved. Objective Three explored the combined effect of AGB and RAE on CPR. Evidence indicated a mediated pathway, with AGB indirectly improving resilience through RAE (indirect effect = 0.095). AGB had a stronger effect on RAE ($\beta = 0.255$, $t = 4.016$, $p < 0.000$), underscoring that agile practices contribute most when enhancing resource allocation. This finding corroborates Otley (2016), who argued that budgeting is most effective when aligned with resource use and adaptability. Similarly, Mahohoma and Boschetti (2025), who noted that beyond-budgeting works best with strong allocation mechanisms. Thus, Objective Three was also achieved.

d. Conclusion and Recommendations

The study established that Agile Budgeting (AGB) and Resource Allocation Efficiency (RAE) significantly enhance Corporate Resilience (CPR) among listed companies in Nigeria. While AGB had a modest direct effect, its stronger influence was observed through RAE, confirming that resilience is best achieved when adaptive budgeting is complemented with efficient resource deployment. Overall, the objectives were achieved, demonstrating that innovative budgeting practices and resource efficiency jointly strengthen organizational resilience. The study recommended that listed companies in Nigeria should adopt and strengthen flexible budgeting practices that allow for quick adjustments in response to market and environmental changes; firms should develop and institutionalize efficient mechanisms for prioritizing and deploying resources toward critical operational and CSR activities to sustain legitimacy and adaptability and management should integrate agile budgeting with

resource allocation systems to ensure that innovative financial practices translate into resilience-building outcomes.

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