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Business Process Innovation and Organisational Resilience of Transportation Companies in South-South Nigeria

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***Abstract**: The study investigates the relationship between Business Process Innovation and Organisational Resilience of transportation companies in South-South Nigeria. The cross-sectional survey design was adopted and a total population of four hundred (400) employees of ten (10) transportation companies in South-South region of Nigeria was covered. A sample size of 200 respondents were drawn from the population and the simple random sampling technique was adopted in this study. The predictor variable (business process innovation) was operationalized using Process Effectiveness, and Process Efficiency, while the criterion variable (organizational resilience) was measured using Agility, and Adaptability. The hypotheses were analyzed using Partial Least Squares – Structural Equation Model (PLS-SEM) in order to ascertain the relationship between the dimensions of business process innovation and the measures of organizational resilience. The result of the analysis revealed that there is a significant and positive relationship between the dimensions of business process innovation and organizational resilience. It was recommended among others that the transportation firms should ensure process effectiveness by following due process and properly training the workforce as such will help enhance the firm's agility in the business domain.*

***Keywords:** Business Process Innovation, Process Effectiveness, Process Efficiency, Organisational Resilience, Agility, Adaptability.*

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1.0 Introduction

In the ever changing and dynamic business domain, organizations are becoming more aware of the importance of improving the level of organizational resilience in order to withstand the high turbulent in the business domain. Organizational resilience is of great importance, because it enables firms to thrive and compete effectively. In congruence with the above assertion, Akhigbe and Onuoha (2019) opined that in this period of proliferation in technology and failure of corporate entities, only organisation that possess resilience ability can remain agile and stay robust in the business domain. Organisations are all impacted by the complex, dynamic and unpredictably changing environment: technological developments and disruptive business processes, fast changing customers' taste, new entrants and competitive forces. For organization

to remain competitive among these environmental complexities, such organization must develop strategy to enhance their resilience. While some organisations are successfully adjusting and continuously growing, others are not able to withstand the challenges before them.

Understanding Organisational Resilience is therefore more important than ever (Ruiz- Martin et al., 2018). According to Ponomarov and Holcomb (2009), resilience is beyond simply recuperation or anticipation; it also calls for some degree of versatility and the capacity to adjust to both good and bad environmental factors. From an organisational standpoint, they claimed, resilience highlights critical elements like adaptation, versatility, maintenance, and recuperation. A recent systematic review of empirical literature from health and broader sectors defined organisational resilience as "a system's ability to continue to perform and meet its objectives in the face of challenges," emphasizing the system's capacity to survive unexpected events, change and adapt, and go on thriving (Barasa et al., 2018). One important component of organisational resilience is the focus on "restorative, adaptive, and transformative" functions, which promotes beyond organisational survival but, sustainability during challenges (Börekçi et al., 2021).

The idea of innovation of a company's business process has been informed subsequently of the increasing need to address the archaic way of operation to be able to enhance the fortune of the entire organization. Innovations in processes enables organisations to become agile and responsive to external shocks. Similarly, companies that have embraced business process innovation can quickly adapt to remote work and continue operations during crisis. Investing in business process innovation is a critical success factor in this era of frequent changes because the survival and continuity of the firms can be influence by the level of firms innovation. Integrating innovative business processes and organisational resilience is vital for sustained growth and success especially in a situation where challenges and opportunities coexist. Businesses that effectively leverage on innovation to enhance their procedures and concurrently build resilience are better positioned to thrive in this diverse and ever-changing environment, by doing this, they not only secure their future but also contribute to the overall economic development of country (Gonca et al, 2019).

Business process innovation can bring a multitude of benefits, with the potential to positively influence both individual performance and the fortunes of the wider business. Business process innovation enhances efficiency improvement, cost reduction, competitiveness and continuity. In transportation companies, business process innovation is a necessity so as to overcome destructive attacks that the organization may encounter. Several studies has been done on resilience of organization (Ahiauzu & Uche, 2015; Bartusevičienė, Pazaver & Kitada 2021; Eze & Ogunbanjo, 2021; Guchuhi, 2021). There is scanty empirical work that has examined the relationship between business process innovation and organizational resilience of transportation companies in south-south Nigeria. There is also dearth of work on the moderating influence of organizational structure on the relationship between business process innovation and organizational resilience. This study intends to bridge this observed lacuna by empirically examining the relationship between business process innovation and organizational resilience of transportation companies in south-south Nigeria.

1.2 Statement of the Problem

Transportation companies operating within the landscape of south- south region, Nigeria, find themselves entrenched in a complex matrix of challenges that significantly impact their organizational resilience (Zsidisin & Wagner, 2010). These challenges are deeply rooted in the local setting and its broader dynamics of the transportation industry, posing a formidable barrier to sustained growth and success. The amalgamation of inadequacies in infrastructure, intricate regulatory frameworks, capricious weather patterns, and the volatility of fuel prices collectively form a multifaceted predicament that has affected the resilience ability of the transportation companies. Among the top pressing challenges facing transportation companies in South-south, Nigeria is the glaring inadequacy of the infrastructure supporting their operations. The road networks, bridges, and ports, while essential for seamless movement, are often substandard and poorly maintained (Syntetos & Naim, 2007). This not only leads to operational inefficiencies but also exacts a toll on the physical condition of vehicles. Increased wear and tear not only drive up maintenance costs but also contribute to significant downtime, affecting overall service availability and customer satisfaction.

Furthermore, another challenge that is affecting the resilience ability of the transportation companies in south south Nigeria is the issue of regulation. The regulatory environment within which transportation companies operate in south-south is labyrinthine in its intricacy (Christopher & Peck, 2004). Navigating a web of state and federal regulations requires a considerable investment of time, effort, and resources. Compliance challenges introduce operational delays, potential tribunal proceedings, and administrative burdens that inhibit the agility necessary for responsive operations. This intricate regulatory ecosystem constrains the companies' capacity to adapt swiftly to market changes and impedes their ability to innovate effectively.

Given the intricacies of these multifaceted challenges, adhering to traditional operational paradigms offers limited potential for successful navigation. An alteration in perspective is imperative—one that champions innovative thinking and the strategic adoption of cutting-edge technologies. Business process innovation emerges as a beacon of hope, holding the promise of not only addressing these challenges but also reshaping the operational landscape for transportation companies in south-south, Nigeria. By reengineering their core processes and embracing innovative solutions, these companies can forge a path toward enhanced resilience which could turn around their fortune in the ever-changing business word (Beverungen et al., 2020). Hence, this study examined how business process innovation in terms of process effectiveness, process efficiency, collaboration and integration can help enhance organizational resilience of transportation companies in south-south Nigeria.

Objectives of the Study.

The objective of the study is to examine the relationship between;

1. Process Effectiveness and Agility of transportation companies.
2. Process Effectiveness and Adaptability of transportation companies
3. Process Efficiency and Agility of transportation companies.
4. Process Efficiency and Adaptability of transportation companies**.**

Research Hypotheses

To answer the above research questions, the following null hypotheses were proposed.

Ho_1: There is no significant relationship between Process Effectiveness and Agility of transportation companies in South-south, Nigeria

Ho_2. There is no significant relationship between Process Effectiveness and Adaptability of transportation companies in South-south, Nigeria.

Ho_3: There is no significant relationship between Process Efficiency and Agility of transportation companies in South-south, Nigeria.

Ho_4: There is no significant relationship between Process Efficiency and Adaptability of transportation companies in South-south, Nigeria

2.0 Review of Related Literature

This study is anchored on the theoretical analysis of knowledge-based view theory. Knowledge-based view (KBV) can serve as the theoretical underpinning for this study because process innovation involves knowledge discovery, application, and transformation (Yayavaram and Ahuja 2008; Saldanha et al., 2020). The KBV recognizes knowledge as the primary strategic resource and argues that knowledge is crucial for value creation and competitive advantage (Grant 1996; Alavi and Leidner, 2001). Knowledge-based view is an extension of Resource Base-view of a firm (De Carolis2002). The interpretation of knowledge as a resource establishes the theoretical connection between Resource Base view and Knowledge based view (Ariely 2003). Knowledge management techniques are intimately related to the ability to learn and solve problems, which produces innovative forms of value (Yayavaram and Ahuja, 2008; Saldanha et al., 2020). Thus, firms with better knowledge management competence can create conditions that nurture and foster innovation (Plessis, 2007).

Research Model

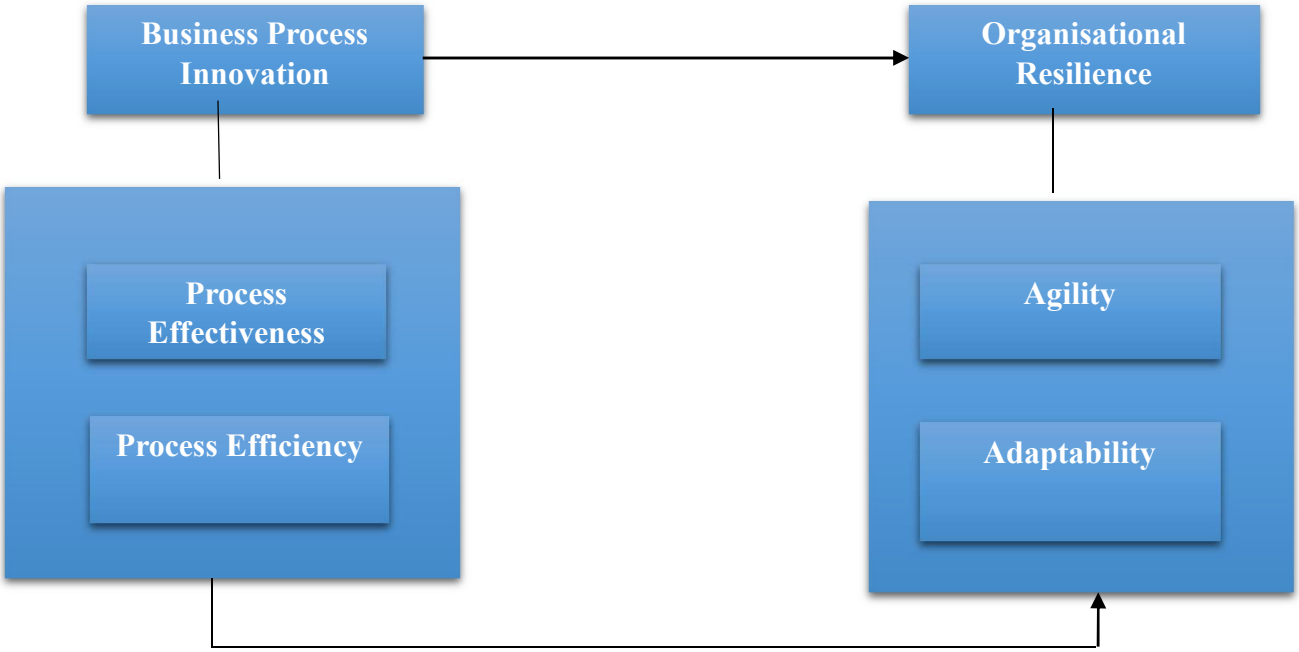

Figure 2.1: Conceptual Framework showing the relationship between Business Process Innovation and Organisational Resilience
Source: Conceptualize by the author from Kumar, Reinartz (2018) and Annarelli and Nonino, (2016)

Business Process Innovation

Business Process Innovation is the introduction of new and improved procedures inside a company that lead to increased efficacy, productivity, and competitive advantage. It involves redesigning existing processes, introducing technology or automation, or establishing completely novel approaches to tasks. Hammer & Champy (1993) emphases that "Business Process innovation refers to the systematic and radical rethinking and redesign of existing business process". "Business process innovation aims to improve operational performance by cutting expenses and cycle times while enhancing product quality and customer service" (Davenport 1993). Westcott & Freund 1998 posited that the creation and application of innovative business processes entails new processes, technologies, and strategies optimize business operations achieve competitive advantage. "Business process innovation focuses on finding novel ways to achieve business objectives as well as fulfil client demands, often through a combination of rethinking, redesigning and technology enablement "(Stomer & Krcmar 2013). The process by which a company introduces new concepts, procedures, techniques, offerings, or goods with the aim to maintain profitability is known as business innovation.

Process Effectiveness:

The effectiveness of a process can be gauged by how well the end result aligns with the goals of Business Process Improvement (BPI). To achieve effectiveness, a process should generate the intended result while satisfying customer requirements in a satisfactory manner. Effective means the ability to choose appropriate goals and achieve them. To put it more precisely, a genuinely effective process will ensure customer satisfaction by delivering precisely what's needed, including the correct outcomes at the right location, time, and cost. Jeff Sutherland et. al (2018) stated that efficiency is concentrated on performing the correct thing, whereas effectiveness concentrates on how quick that value is delivered. Faster delivery reduces the cost of production in many environments. A small reduction in cost can produce a significant gain in profitability. It could likewise increase effectiveness. A building process's effectiveness can be defined as its capacity to meet the needs, goals, and preferences of the consumers involved in the construction industry, primarily the project owners. The way the building process adds to greater value for proprietors and consumers is what determines how effective it is. According to Samset (1998), effectiveness measures the realisation of the project's purpose, or the project's long-term consequences. This represents the viewpoint of the project owner and the users.

Process Effectiveness is concerned with achieving desired outcomes and delivering value to customers. It involves the aligning business processes with corporate objectives and customer expectation. In addition to helping the employees understand what has to be done and paving the way for growth, good processes offer a means of communication and the application of uniform standards and practices inside the company. Good procedures are designed with the needs of the customer and users in mind, saving time and boosting overall efficiency. This therefore significantly boosts your company's performance. Your team is given the tools they need to interact in a more effective and agile way, and you can make quicker, wiser choices. A "good process" efficiently integrates people and technology. A successful process must satisfy users' and customers' demands in the fewest number of stages feasible. When technology is used in a process, it will make a good process even better and make a bad process even more ineffective.

Process Efficiency:

Process efficiency is a fundamental dimension of business process innovation. It involves optimizing workflows, minimizing waste, and achieving higher output with the same or fewer resources. Process efficiency is derived from a standard metric used for decades, in Lean Manufacturing - value-added work time divided by clock time. In actuality, process efficiencies for enhanced operations using Lean techniques surpass 25%, while the typical Scrum team Process Efficiency for completing a Product Backlog. Process effectiveness is a metric used to assess a process's capacity to provide desired effects or outputs that may be qualitatively assessed. It refers to a qualitative result of a process that is used to gauge how well objectives or requirements related to the process were met. Making informed judgments on better process management relies heavily on the effectiveness of the procedures being used. Decision-makers can use it, in particular, to: Evaluate process performance, Create more effective management

techniques and methods, Prepare for upgrades, Conduct more process analysis (Task management guide.com).

Concept of Organisational Resilience

Organisational resilience is the ability of the organisation to "bounce back" from outside and internal sources attacks. Its roots can be found in the Latin word "resiliere," which also means "jumping back" (Klein, Nicholls, & Thomalla, 2003; Paton & Johnston, 2006). Ecology was the first scientific discipline to incorporate the phrase in creating its theoretical architecture, despite the term's emergence being observed in common use for decades. In the subject of ecology, the resilience idea was first applied by Holling in 1973. Organizational resilience, nevertheless, was initially conveyed to the literature by Meyer (1982). Staw, Sandelands, and Dutton (1981) mentioned "flexibility" and "rigidity" which formed the foundation for organizational resilience (Wokutch, Singal, Gerde, & Naar, 2016). Corporate resilience refers to an organisation's capability to anticipate crises, respond to short-term shocks, and recover from unexpected disruptions (Osita-Ejikeme & Amah, 2022).

Events that jeopardize an organization's security and stability as well as those of its surrounds include diseases, terrorist attacks, economic downturns, faulty equipment, and human error (Okun, 2021). A company's capacity to tolerate events, damaging events, crises, and similar threats offers an alternate treatment (Karaköse, Mamolu, & Cence, 2020). It places an emphasis on the capacity for adaptation to any setting and circumstance, facility improvement, and ongoing development (Freeman, Edwards, & Schroder, 2006). As a result, it is a capability that is crucial to every form of company. A part of organizational resilience is guaranteeing sustainability, Organizational resilience is defined by the standard BS 65000 as: "the ability of an organization to anticipate, prepare for, respond and adapt to incremental change and sudden disruptions So as to endure and thrive". It goes above risk management to take a more comprehensive approach to the performance and well-being of businesses. An organisation that is robust not only endures over the long run, but prospers and is prepared for what is ahead.

Agility:

Agility refers to an organisation's ability to adapt, respond and prosper notwithstanding rapidly changing circumstances and uncertainties. The organisation's ability to be agile when it's necessary to make decisions and delegate functions to other managers.(Nogueira et al (2017). In the words of Aaron De Smet (2015), the ability of an organisation to revitalise itself, adapt, alter swiftly, and thrive in a tumultuous, unclear context that evolves constantly is known as agility. Agility is a key measure of organizational resilience. In a corporate setting that evolves quickly where uncertainties, disruptions, and challenges are common, agile organizations are better equipped to adapt, respond, and thrive. Patrick & Lucy (2018). Agility as the ability to redirect resources in a timely way, faster than the changes in the organisation's environment and faster than the rate of change by competitors. This calls for quick decision-making and action-taking processes in addition to situational awareness, or the capacity to perceive and comprehend one's surroundings. There is a cost associated with agility; having resources available or readily

removed from other non-essential tasks requires additional work. Its value arises from the organization's ability to quickly restructure and reorganise capabilities in order to get an ideal spot in the market. Agility can be divided into two categories: strategic agility and operational agility. Operational agility refers to the capacity to swiftly reallocate resources in response to variations in need. The ability to swiftly reallocate resources to novel business segments is known as strategic agility. The goal of both is re-deployment; the difference is that one is short-term and operational, while the other aims to take advantage of a strategic opportunity or counter a strategic threat. It takes much more than just having "spare" resources because those resources must be able to complete the necessary tasks fast.

Adaptability:

The organization ability to perceive, understand and adapt to environmental changes is seen as adaptability (Mc Aslan 2010, Nogueira et al. 2017). As a result of frequent changes that is bound to occur in any organization, it is therefore necessary for organization to prepare and be readily alert for such changes. For companies to overcome the period of crisis, and strength for future moments of turbulence, adaptability is necessary. (Sutcliffe & Vogus 2003). Carmeli and Markman (2011) pointed out that companies that make potential use of resilience to overcome such periods tend to exhibit organizational longevity. Adaptability is considered to be a value in organisations. However, Adaptability is simply the capacity to pick up new abilities in reaction to changing conditions. Ploy hart and Bliese, (2006) emphases that adaptability refers to “an individual’s ability, skill, disposition, willingness, and/or motivation to change or fit different task, social, or environmental features” In real life situation, adaptability is an essential skill that everyone needs for more positive and constructive life, mental health, professional life, social relations, business making products and more.

Per Jones, Ludi, and Levine (2010), adaptive capacity is a system's ability to plan for adaption, transformation, or alterations from its typical patterns in order to mitigate any potential harm, seize opportunities as they present themselves, or deal with shock. Within the dynamic capabilities theory, adaptive capacity is a recognized strategy for optimizing competitiveness. This is significant because, in the face of significant environmental change, successful organisations should respond in concert with the need to recalibrate existing competencies in other to reflect current realities. Brooks et al., (2004) noted that adaptive capacity is a systems’ inherent ability to alter its characteristics or behavior and expand its coping range. Adaptive capability should enable an organisation to change its known trajectory or track in order to bestow resilience onto it. Studies suggest that the inability to achieve a commensurate shift in paradigm when situation calls for it; will have unpleasant and even undesirable outcomes.

Empirical Review

Xinbing Gu, et al. (2023) examined the role of digital techniques in organizational resilience and performance of logistics firms in response to disruptive evets: flooding as an example. This study

uses multiple research methods to examine the role of DTs, including DO and DC, in logistics firms' OR during floods. In Phase 1, managers in logistics firms shared their views on the role of DTs for OR during floods through semi-structured interviews, which revealed that Digital Orientation and Digital Competency might affect Organisational Reslience and firm performance through thematic analysis. This study further develops a conceptual framework and the associated hypotheses by combining the findings of Phase 1 with those reported in the literature. In Phase 2, a self-administered questionnaire survey was used to gather survey data. The conceptual model was then tested using structural equation modelling. The findings demonstrate that DC has a favourable impact on both OR and company performance. Through DC's role as a mediator, DO can have a direct and beneficial impact on company performance and indirectly on OR. This work sheds light on how DTs fortify OR in the face of disruptive events, which advances OR research and closes the theory-practice divide.

Nessrin Shaya et. al (2023) conducted an investigation on Organizational Resilience of Higher Education Institutions. By investigating and developing a theoretical model on the organisational skills that make up organisational resilience, the current work seeks to advance this exciting field of study. Thirteen CEOs from reputable universities were interviewed using a qualitative phenomenological research design. The material was then subjected to a thematic analysis. The results offered a thorough understanding of the situation facing UAE universities at this early stage of crisis adaption. The concept of organisational resilience was developed as a process consisting of two main moderators (crisis leadership traits and employee resilience), five important antecedents (knowledge, resources availability, social resources, power relationships, and innovative culture), and three sequential stages (anticipation, coping, and adaptation). Significant conclusions about the required crisis leadership philosophies were also found.

Ahiauzu L. Uche (2015) examined the association between process innovation and organizational resilience. Using a survey study design in generating data from the target Public Universities situated in south-south Nigeria, the associations were analysed in three stages; the demographic analysis in which charts and frequency distributions were used to illustrate the sample characteristics of the study, the univariate in which mean scores and standard deviations were used in descriptively assessing the nature of each variable and the bivariate in which the spearman’s rank order correlation statistical tool was used in the test for all hypothesized associations. The findings demonstrated a strong correlation between process innovation and the situation awareness, keystone vulnerability, and adaptive capacity metrics of organisational resilience. Based on the aforementioned findings, it was advised that in order for organisations to continue to be resilient in the midst of constantly shifting socioeconomic dynamics, it is critical that they identify, embrace, and make effective use of the new approaches and tactics that are accessible.

McManus, et. al. (2008). Examine facilitate Process for improving organizational Resilience. The study shows that resilient organizations contribute significantly to resilient communities. However, the challenge of creating more resilient organisations is hampered by the difficulty to materialise the idea of resilience into functional organisational architecture. In addition, resilience is often considered to be a crisis or emergency management issue. The link between

creating resilient day-to-day operations and having a resilient crisis response and recovery is typically not well understood by organizations. Resilience for organizations is found to have three principal attributes. Situation awareness, management of keystone vulnerabilities, and adaptive capacity. We present an assisted procedure that helps organisations perform better in relation to these criteria. Resilience management is the approach that was created and tested with ten case study organisations that were intentionally chosen to reflect a broad range of business sizes, industry sectors, and types in New Zealand.

3.0 Methodology

The cross-sectional survey design was used in this study. A total of four hundred (400) employees of ten (10) transportation companies in South-South region of Nigeria served as the population of the study. A sample size of two hundred (200) respondents were drawn from the population and the simple random sampling technique was adopted in this study. This technique was used because it gives a true representative of the entire population and reduces the tendency for researcher bias in selecting the sample case. Thus, a total of 200 questionnaires was distributed to employees in the 10 selected transportation companies. Items were rated on a 4-point Likert scale ranging from 1-strongly disagreed, 2-disagree, 3-agree and 4-strongly agreed. Partial Least Squares - Structural Equation Modelling (PLS-SEM) with SmartPLS version 4.0.2.9 software were used to examine the data.

Table 1: Reliability Test

	Cronbach's Alpha	Composite Reliability
Adaptability	0.777	0.803
Agility	0.790	0.831
Process Effectiveness	0.858	0.861
Process Efficiency	0.782	0.792

The Cronbach's Alpha reliability and Composite reliability values for each of the constructs were greater than 0.7. Therefore, our constructs are reliable.

Table 2: Validity Test

	Average Variance Extracted (AVE)	Adaptability	Agility	Process Effectiveness	Process Efficiency
Adaptability	0.533	**0.730**			
Agility	0.563	0.245	**0.750**		
Process Effectiveness	0.638	0.349	0.278	**0.799**	
Process Efficiency	0.534	0.279	0.201	0.138	**0.731**

The average variance extracted (AVE) of all the constructs are greater than 0.5 which signifies the presence of convergent validity. The diagonal values (in bold) are greater than the AVEs, thus confirming that each construct is distinct from any other one. Hence, the model endorsed discriminant validity for all the constructs.

4.0 Result

A total of 200 questionnaires was distributed to employees in the 10 selected transportation companies. While only 195 (97.5%) copies of the questionnaire were retrieved, the researcher observed that 4 (2%) copies of the questionnaire were either wrongly filled or incomplete thereby making them invalid to the study. Only 191 (95.5%) of mobilized copies of the questionnaire were considered valid and admissible and therefore utilized in the study. Figure 4.2 shows the path diagram of the variables.

Business Process Innovation = BPI; Process Effectiveness = PES; Process Efficiency = PEY; Organisational Resilience = ORR; Agility = AGY; Adaptability = ADY

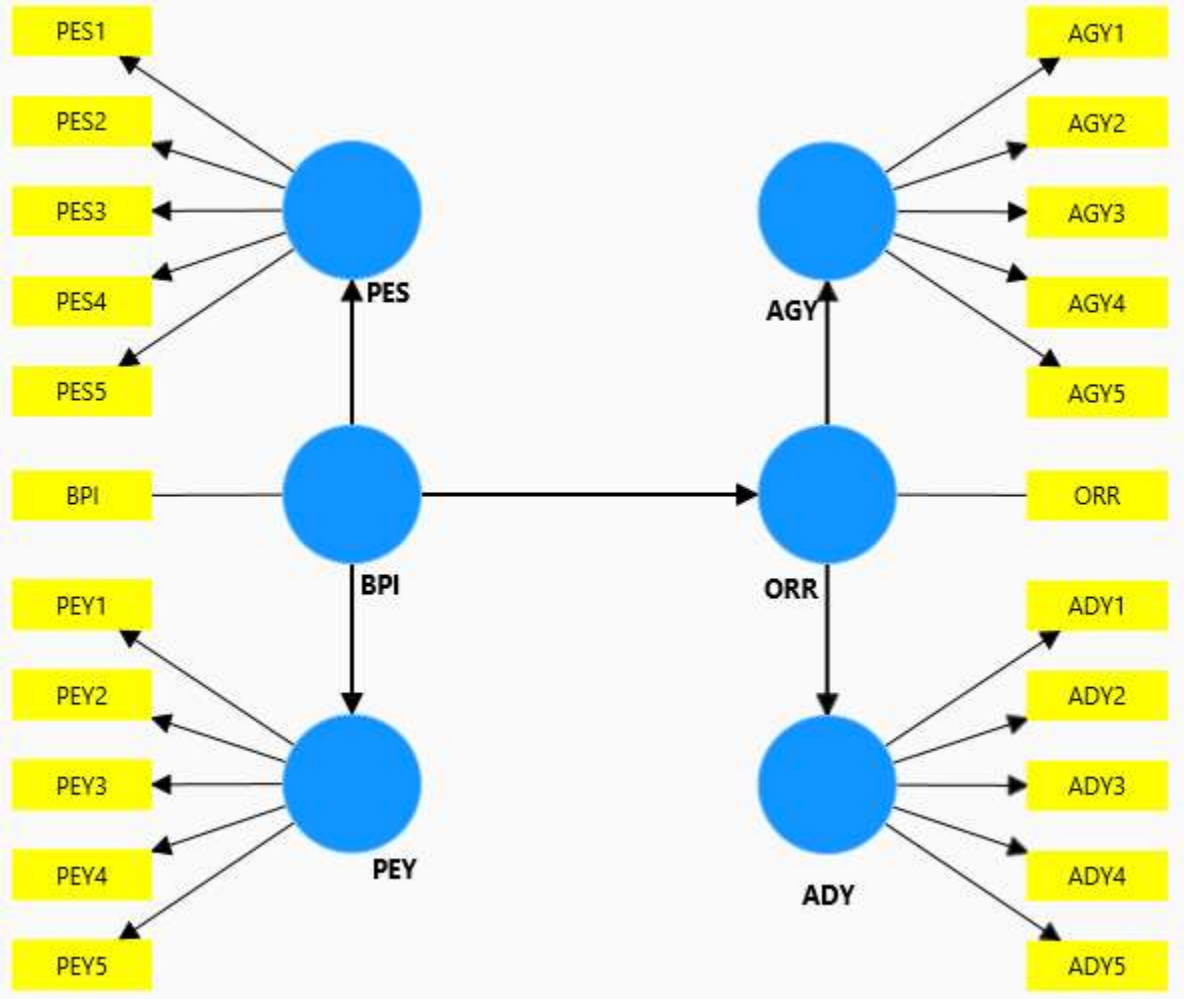

Figure 2: Research Model

The path diagram between the independent and dependent variables is displayed in Figure 4.8. The three constructs of Process Effectiveness (with items ranging from PES1 to PES5), and Process Efficiency (with items PEY1 to PEY5) are used to operationalize the independent variable, which is Business Process Innovation. The dependent variable, Organizational Resilience, is operationalised using 2 constructs, Agility (with items ranging from AGY1 to AGY5), and Adaptability (with items ADY1 to ADY5)

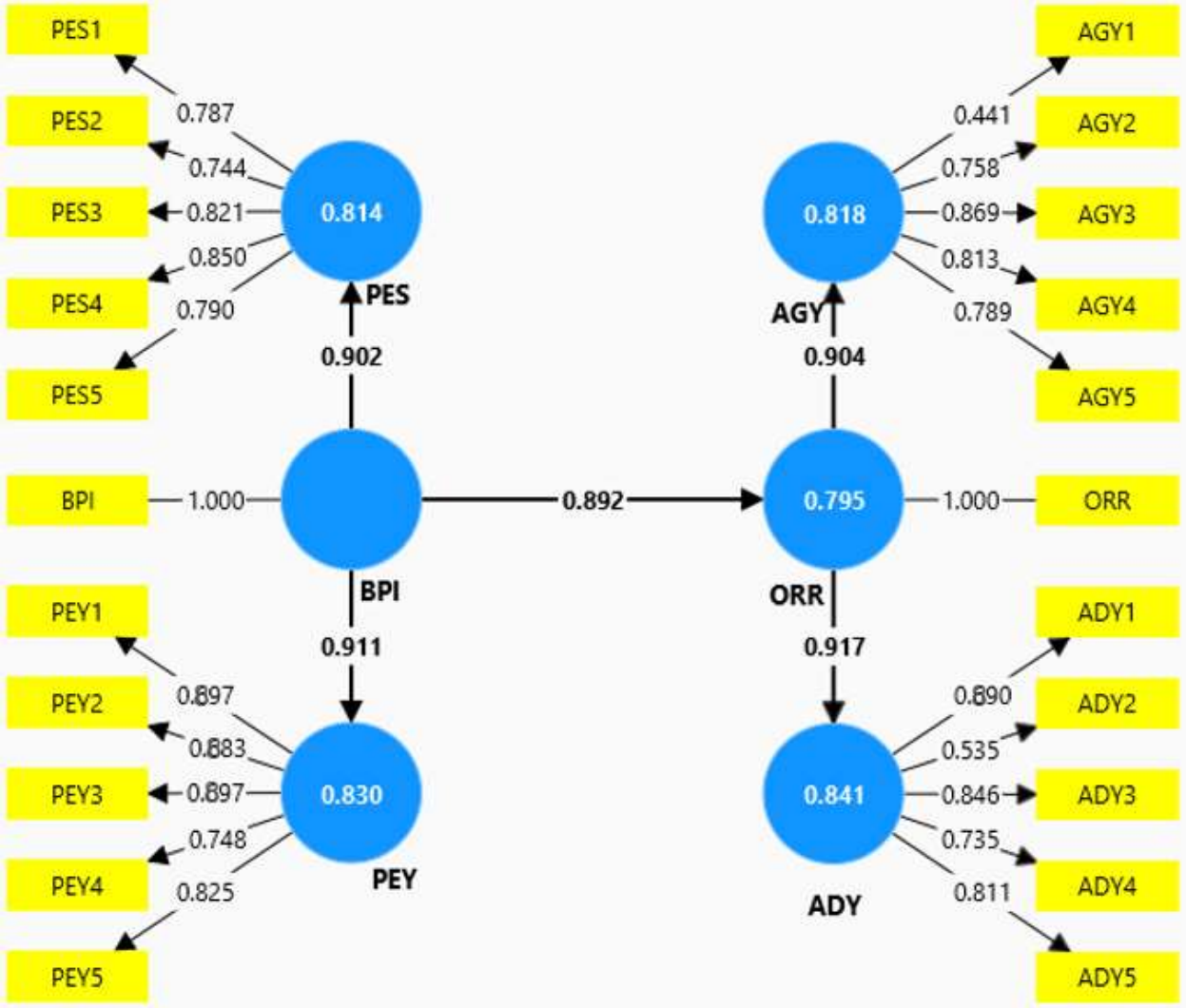

Figure 3: Output for Outer Loadings of Indicators

Figure 3 shows that all the response items for the constructs satisfied the threshold condition of 70%. AGY1 and ADY2 had outer loadings of 0.441 and 0.535 respectively, which were less than the threshold of 0.7, consequently, they were not used in the analysis.

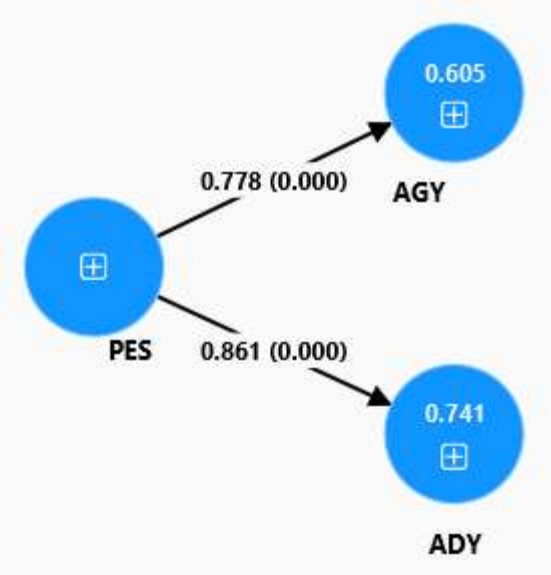

Figure 4: Hypotheses 1 and 2

The path relationship analysis presented in Figure 4 indicate that there are positive and significant paths between Process Effectiveness and Agility (where, β = 0.778; p = 0.000; and R^2= 0.605), and Process Effectiveness and Adaptability (where, β = 0.861; p = 0.000; and R^2= 0.741). Therefore, the null hypotheses 1 and 2 were rejected and the alternate hypotheses were accepted.

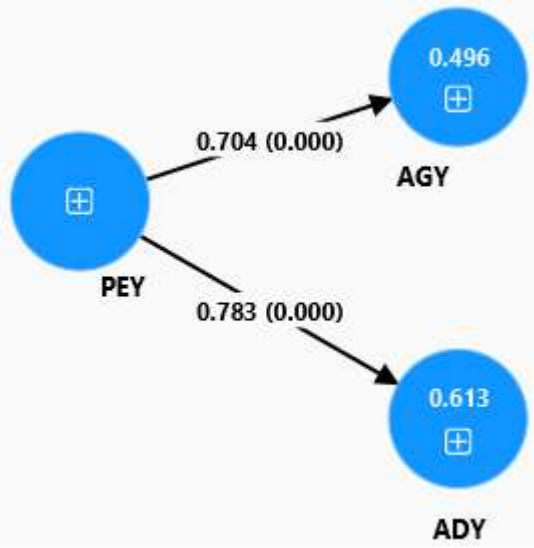

Figure 5: Hypotheses 3 and 4

The path relationship analysis presented in Figure 5 indicate that there are positive and significant paths between Process Efficiency and Agility (where, β = 0.704; p = 0.000; and R^2= 0.496), and Process Efficiency and Adaptability (where, β = 0.783; p = 0.000; and R^2= 0.613). Therefore, the null hypotheses 3 and 4 were rejected and the alternate hypotheses were accepted.

5.0 Discussion of Findings

On the basis of the hypotheses tested, the results are discussed within the context of existing literature of Business Process Innovation and Organisational Resilience. The first hypothesis states that there is no significant relationship between Process Effectiveness and Agility. The bivariate analysis SmartPLS output revealed that there is a relationship between Process Effectiveness and Agility. The analysis on process effectiveness and agility yielded a path coefficient (β) of 0.778 with a p-value of 0.000, indicating a positive, strong and significant relationship between the two variables. The coefficient of determination (R^2) value of 0.605 signifies that 60.5% of the total variation in agility can be explained by changes in process effectiveness. This finding highlights the crucial role of process effectiveness in organizations, as it significantly contributes to increasing agility in the organisation. This result aligns with the research conducted by Xinbing Gu, et al. (2023) that organizational resilience relates business process and techniques of logistics firms.

The second hypothesis slates that; there is no significant relationship between Process Effectiveness and Adaptability. The bivariate analysis output revealed that; there is a relationship between Process Effectiveness and Adaptability this is based on the fact that the P-value which is the significant value was less than the level of significance (P-value = 0.000 < 0.05). The analysis of process effectiveness and adaptability revealed a path coefficient (β) of 0.861 with a p-value of 0.000, indicating a significant and positive, strong relationship between these variables. The coefficient of determination (R^2) value of 0.741 suggests that 74.1% of the total variation in adaptability can be explained by changes in process effectiveness and adaptability. This result highlights the crucial role of process effectiveness in the enhancement of adaptability. This finding is consistent with Nessrin Shaya et. al (2023) that Organizational Resilience relates with process effectiveness.

The third hypothesis states that there is no significant relationship between Process Efficiency and Agility. The bivariate analysis output shows that there is a relationship between Process Efficiency and Agility. The analysis of process efficiency and agility revealed a path coefficient (β) of 0.704 with a p-value of 0.000, indicating a positive, strong, and significant relationship between these variables. The coefficient of determination (R^2) value of 0.496 suggests that 49.6% of the total variation in agility can be explained by changes in process efficiency. This finding highlights the crucial role of process efficiency in organizations, significantly contributing to organizational agility. These results align with previous research conducted by Ahiauzu (2015) that process innovation and agility relate with organizational resilience.

The fourth hypothesis states that there is no relationship between Process Efficiency and Adaptability. The bivariate analysis output shows that there is a relationship between Process Efficiency and Adaptability based on the fact that the P-value of 0.000 was less than the level of significance (P-value = 0.000 < 0.05). The analysis of process efficiency and adaptability revealed a path coefficient (β) of 0.783 with a p-value of 0.000, indicating a positive, strong, and significant relationship between these variables. The coefficient of determination (R^2) value of 0.613 suggests that 61.3% of the total variation in adaptability can be explained by changes in process

efficiency. This finding highlights the vital role of process efficiency in enhancing an organization's adaptability. This result is consistent with the findings of McManus, et. al. (2008) that process efficiency relates to organizational resilience.

6.0 Conclusion and Recommendation

The study focused on evaluating the business process innovation and organizational resilience of transportations companies in the South-South region of Nigeria. The dimensions of business process innovation, namely process effectiveness, and process efficiency, were explored in relation to the measures of organizational resilience—agility, and adaptability. The integration of business process innovation into organizational practices enhances not only the efficiency of operations but also the effectiveness in achieving strategic goals. The continuous pursuit of streamlined processes, supported by cutting-edge technologies and collaborative frameworks, creates a foundation for sustainable growth and adaptability. As organizations evolve in response to market changes, their ability to innovate processes becomes a cornerstone for maintaining a competitive edge. Agility, as a measure of organizational resilience, reflects the organization's ability to swiftly respond to changes and capitalize on opportunities. Adaptability ensures that the organization can adjust its strategies and operations in the face of evolving circumstances. These resilience measures work in synergy with the dimensions of business process innovation, forming a dynamic and responsive organizational ecosystem. Based on the conclusions, the following recommendations are proffered;

1. The transportation firms should ensure process effectiveness by following due process and properly training the workforce as such will help enhance the firm’s agility in the business domain.
2. The transportation companies should also develop their current process to ensure process effectiveness as such will help improve the adaptability of the firms.
3. The management of the transportation companies should allow their employees initiatives in process improvement as such will help enhance the firms agility
4. The management of the transportation company should provide necessary tools to execute a task as such will help improve the adaptability of the firms.

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