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Configuring Resilience and Environmental Sustainability to Achieve Superior Performance under Differing Conditions of Transportation Disruptions

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Abstract : Recent trends of catastrophic events, such as the Covid-19 pandemic, the Suez Canal blockage, the Russia-Ukraine conflict, the Israel-Hamas conflict, and the climate change crisis, continue to devastate supply chains and the broader society. Prior authors have advocated for a simultaneous pursuit of resilience and sustainability as crucial for navigating these challenges. Nevertheless, the relationship between resilience and sustainability is a rather complex one: resilience and sustainability are considered unrelated, substitutes, or complements. Scholars also suggest that different firms prioritize resilience and sustainability differently for varied strategic reasons. However, we know little about whether, how, and when these choices produce different typologies of firms to explain differences in financial and market performance outcomes. This research draws inferences from the systems configuration approach to organizational fit to contend that a taxonomy of firms may emerge based on how firms configure resilience and environmental sustainability. The study further examines the effects of these taxonomies on financial and market performance in differing transportation disruption conditions. Resilience is operationalized as a firm's ability to adjust current operations, structure, knowledge, and resources in response to disruptions, whereas environmental sustainability is operationalized as the extent to which a firm deploys resources judiciously and keeps the ecological impact of its operations to the barest minimum. Using primary data from 199 firms in Ghana and cluster analysis as an analytical tool, the study identifies four clusters of firms based on how they prioritize resilience and sustainability: Cluster 1 - "strong, moderate resilience, high sustainability firms," Cluster 2 - "sigh resilience, high sustainability firms," Cluster 3 - "high resilience, strong, moderate sustainability firms," and Cluster 4 - "weak, moderate resilience, strong, moderate sustainability firms". In addition, ANOVA and regression analysis revealed the following findings: Only clusters 1 and 2 were significantly associated with both market and financial performance. Under high transportation disruption conditions, cluster 1 firms excel better in market performance, whereas cluster 2 firms excel better in financial performance. Conversely, under low transportation disruption conditions, cluster 1 firms excel better in financial performance, whereas cluster 2 firms excel better in market performance. The study provides theoretical and empirical evidence of how resilience and environmental sustainability can be configured to achieve specific performance objectives under different disruption conditions.

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