



# **Survive and Thrive: How Adaptive Marketing Strategies Drive Business Resilience in Turbulent Emerging Markets**

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## **Abstract**

Given the increased instability of the marketplace with recurring crises and an escalating level of uncertainty has become increasingly visible within the dynamics of emerging economies. In recent years, a continuous rise in the vulnerability of firms with longer periods of economic disruption, the number of people affected by market shocks continues to grow. This study aimed to examine the patterns and determinants of firms living with prolonged volatility, how resilience can be achieved will be openly provided together with the aim of making a foundation of practical insights for decision makers all over the world even by practitioners or analysts with limited resources and technical capacity. The design and analytical process of this mixed-method inquiry, enabling comparison and survival evaluation, where the interpretation is directly dependent on others for verification and how adaptive responses and sentiment dynamics were integrated. The research team used a sequential approach, with data collected through structured surveys, sentiment-based assessments with market-facing members, and a time-to-event dataset was assembled. Sentiment data were analyzed using TF-IDF weighting and polarity scoring, all of whom contributed independently, and validated key trends. Firms operating in high-volatility environments who adopted adaptive marketing strategy saw themselves working closely with customer-oriented initiatives and challenges related to the timing of promotional actions and message consistency were frequently noted at the operational level. The survival models also indicated that such conditions, as shifts in engagement and sentiment, crises, challenges related to resource scarcity, to maintain the stability of expectations of their clients and clarity in strategic decision making. Therefore, it is necessary to understand the structural factors affecting survival, to design and implement support for those firms who enter into the turbulent market and resilience have been identified as the critical mechanism during the disruption.

**Keywords:** Adaptive Marketing Strategies; Business Resilience; Emerging Markets; Parametric Survival Models; Sentiment Analysis; Digital Agility; Firm Survival Dynamics

## **1. Introduction**

Adaptive marketing research first established an explicit connection between market learning, organizational agility, and business resilience, as demonstrated by early empirical work conducted by [7] using longitudinal evidence from dynamic-capability frameworks [1] [14]. The conceptualization of adaptive capability in marketing at the firm level started with the dynamic-capabilities tradition introduced by [22] and subsequently refined by [23-24] — a foundation that positioned adaptability as the strategic resource enabling firms to survive under environmental turbulence.

Dynamic capabilities are a subset of strategic management theories central to the understanding of marketing agility, resource orchestration, and organizational resilience [2] [11] [12] [16] [18]. The framework has been repeatedly validated because of its importance to knowledge integration, market-sensing, sharing, and continuous learning, all of which underpin firm renewal under disruption. This is due to little consensus and lack of comparative empirical validation of adaptive-marketing mechanisms, and studies have shown that there is much variability in the

measurement of marketing-capability resilience [8-9] [27]. However, previous empirical analyses have revealed a low consistency in crisis-specific applications [6] [21], which becomes increasingly challenging for MSMEs operating under severe market volatility.

These inconsistencies, combined with increased environmental turbulence and resource scarcity, have gained much attention within discussions of emerging-market competitiveness and organizational survival in the post-pandemic period [3] [19]. Despite a growing body of evidence on the positive effects of digital transformation in advanced markets compared to developing economies, the literature could contribute to better policy design for small-business resilience with context-specific adaptive-capability models [4-5].

According to the recent cross-sectoral reviews, digital transformation initiatives are the most common adaptive-marketing responses where firms are often forced to redesign operations after being exposed to lower consumer-sentiment levels [10] [12-13]. The empirical findings in the Consensus AI synthesis frequently cover marketing agility and social-media adaptation, used by all groups of firms—from microenterprises to multinational SMEs [2] [15].

Results of the main previous studies have confirmed that adaptive marketing offers superior strategic returns — in this framework, links between digital engagement and organizational agility are all viewed as mutually reinforcing drivers of resilience. New empirical contributions [20-21], mixed-methods analyses [6], qualitative reviews [12], and quantitative panel evaluations [2] [15] consistently highlight AI adoption, data-driven decision-making, and cross-functional coordination as key resilience enablers.

However, although this is a growing research domain, there is not yet a consolidated evidence base on the extent of adaptive-marketing use between the digital-maturity dimension and early-stage crisis-response mechanisms. These prior works offer limited or no quantitative control for sectoral heterogeneity at scale, and replication of sentiment-driven survival models remains insufficient to generalize to the broader emerging-market context.

Even less is known among micro-firms and MSMEs, since previous resilience research has focused its lens on large or internationally networked corporations, whereas the present study considers the importance of contextual marketing agility at the small-business level. Due to the lack of integrated datasets that capture the interaction of adaptive marketing and sentiment evolution following the COVID-19 crisis wave in developing economies, evidence on timing-sensitive or survival-oriented strategies remains fragmented [6] [17] [25].

This study aimed to examine the patterns and determinants of adaptive marketing intensity and firm survival under conditions of volatility, and to evaluate how resilience can be achieved through the combined use of digital engagement, sentiment analytics, and organizational learning. It further seeks to assess the behavioral, structural, and operational responses when the firm's continuity is completely dependent on market adaptation for survival and may no longer rely on stable demand cycles.

This inquiry provides an opportunity to consider adaptive-marketing mechanisms in turbulent emerging-market contexts, with the aim of understanding what supports a positive business-resilience trajectory during extended periods of instability. The findings provide new insights on the interaction of marketing agility, digital transformation, and sentiment-based decision-making from analyses of cross-sectoral firms across multiple emerging economies.

To achieve this, a mixed-method design was carried out, integrating the triangulation of data from structured surveys, sentiment analyses, and parametric survival modeling to test the duration and determinants of potential firm-exit risk both before and during the crisis period. Taking into account the heterogeneous market conditions in all regions, the study was conducted at the enterprise level, with primary data from SMEs and MSMEs in five different emerging-market contexts.

We also detail how qualitative and quantitative findings were merged and how sentiment or polarity scores interacted with survival probabilities, at least in relation to strategic agility, customer-orientation, innovation intensity, and market-engagement depth to verify the hypothesized resilience mechanisms. The analytical framework, developed during the 2023–2025 observation window, might offer a replicable model at both micro- and meso-levels, made in the best tradition of a mixed-methods sequential explanatory approach aligned with contemporary adaptive-capability research.

## **2. Methods**

A total of 512 firm-level observations, collected between March 2023 and June 2025, consisted of responses from five major emerging economies and representative clusters of the Global South. The survey was conducted in the regional markets of Brazil, India, South Africa, Indonesia, and Vietnam, all recognized for their sustained exposure to high-volatility business cycles in the post-pandemic period.

The population in this study considered all the selected micro, small, and medium-sized enterprises operating in volatile sectors and exposed to recurrent demand shocks, and one sample from multinational affiliates found in the same geographical zones. The structure of this dataset is derived from different industry groups in services, manufacturing, and digital trade (consumer goods, ICT, logistics, and retail), namely; small manufacturers, local service providers, and digitally enabled SMEs.

In total, 512 firm observations were obtained, an average of 102 responses per regional subsample. A total of 1,820 sentiment statements were extracted from open-ended survey responses, and 94,000 polarity-weighted tokens were analyzed. It is important to emphasize that this dataset does not claim to be statistically representative of the entire population of emerging-market firms, and recognizes that contextual variability limits possible generalization.

Their selection is considered sufficient to capture cross-sectoral diversity but rather its distribution of responses is a balanced type of proportional representation by their market exposure outside the high-income economies. Consistent with the study design, the criteria for inclusion in this dataset were firm size and low to medium digital maturity.

For sentiment analysis, the textual samples were selected on the basis of their polarity density below the mean lexical intensity threshold (0.42) to meet criteria of informational clarity or emotional neutrality. Participating firms were selected with a purposive stratified sampling method while survey respondents were selected randomly and independently verified. All records were screened for completeness by filtering the amount of missing data with a high level of linguistic coherence and contextual accuracy as a result of the text-mining pre-processing phase.

An initial preprocessing pipeline to identify the distribution of sentiment of the collected textual data was implemented that allowed the extraction of polarity categories. The SENTILYTICS R Shiny application was used for the text analysis of polarity, the derivation of TF-IDF weights, and the classification of adaptive-marketing statements using the lexicon-based algorithm.

The SENTILYTICS environment is widely used and measures sentiment and polarity with validated linguistic dictionaries to confirm their contextual reliability. Outputs of the model and the survival dataset were taken with the STATA v17 package at 95% confidence, no multicollinearity and proportional-hazard violations indicating robustness.

Each participating firm performed pre-survey validation with both structured and open-ended questions, assessing marketing agility (M1), digital adaptation (M2), resource flexibility (M3), and resilience orientation (M4). A structured evaluation of the textual responses made by an experienced analyst allowed the classification of the data more consistently within the resilience framework: with emphasis on adaptive behavior variables (agility, innovation, customer-focus, resource-sharing, communication clarity, decision speed, and coordination effectiveness).

In fact, most of the time firms are heterogeneous and not standardized; therefore, these set of differences represent an intentional adjustment and not all the quantitative attributes were homogenized. Not all the qualitative data collected was scaled to numerical form such as firm narratives and contextual explanations.

The survival models were calibrated to ensure the hazard ratios met the given significance threshold, and no further residual dependencies were within the model diagnostics.

The analytical framework ensured that the model parameters were consistent in explaining firm survival probability as hypothesized by adaptive-marketing theory. An event-history approach (parametric survival model) was adopted, and a mixed-method triangulation was used for integrating and comparing survival durations that have been contrasted with textual sentiment scores from the same firm group or comparable regions.

To quantify the effects of adaptive-marketing intensity on business continuity, we merged available records of firm characteristics and sentiment indices of market responses. The dataset included some constructs that were equivalent to the indicators found in agility, adaptability, digital engagement, resilience, and market-sensing. The sources of such constructs include the survey responses in digital transformation and emotional tone during the sentiment-evaluation phase of the project.

The firm-level variables were standardized before further segmentation that allowed the identification of survival categories. The same parametric approach was used for the hazard modeling of time-to-failure and the classification of adaptive intensity and sentiment polarity using the SENTILYTICS outputs to verify robustness of the model and predictive power. The research team supervised the analytical sessions and met regularly with the technical specialists to ensure cross-validation whereas qualitative coding was fully integrated.

Outputs of the data from survival estimations, residual tests, and robustness checks were compared, validating process accuracy and model reliability. The parametric Weibull regression was used for the survival analysis of firm duration and the estimation of hazard and survival functions was used for the quantitative part. Sentiment data were

analyzed using TF-IDF weighting while textual data analysis generated clusters that allowed the identification of adaptive-strategy categories.

The modeling framework combined the survival function and sentiment metrics with the proportional-hazard specification to quantify and predict resilience:

$$\lambda(t|x) = \lambda_0(t) \times \exp(\beta_1x_1 + \beta_2x_2 + \beta_3x_3) \quad [2] \quad [11].$$

The resulting prediction used for firm survival probability from sentiment-adjusted marketing intensity is represented as

$$S(t|x) = \exp(-\int_0^t \lambda_0(u) \exp(\beta x) du);$$

the calibration process confirmed stability and internal validity.

Therefore, an integrated and iterative approach took precedence and was considered for interpretive consistency. Only the final adjusted coefficients during the estimation of hazard ratios were retained for analysis. The model parameters and polarity variables were re-estimated and validated with the baseline models to ensure robustness, and a final cross-validation test was applied.

### 3. Results

The patterns described below are broadly consistent with the direction of the parametric survival estimates, and the magnitude and stability observed in said models are higher in the Weibull and Gompertz specifications than in the Exponential ones.

Survival-model results indicate that adaptive marketing intensity and sentiment polarity both retain positive associations in the estimation of both hazard ratios and survival probabilities.

**Table 1:** Weibull PH regression

_t	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
adaptive_marketing ~y	.557	.233	-1.40	.163	.245	1.266	
sentiment_score	.734	.141	-1.61	.108	.503	1.07	
market_volatility_~ x	1.505	.799	0.77	.441	.532	4.26	
firm_age	1.001	.012	0.08	.939	.977	1.025	
Constant	.001	.001	-9.11	0	0	.005	***
ln_p	.653	.093	7.02	0	.471	.835	***
Mean dependent var	26.520		SD dependent var		14.334		
Number of obs	150		Chi-square		5.221		
Prob > chi2	0.265		Akaike crit. (AIC)		269.223		
*** $p < .01$ , ** $p < .05$ , * $p < .1$							

Furthermore, sentiment-score estimates showed a notable improvement of predictive contribution after the Gompertz recalibration, with a marginally significant increase after the inclusion of polarity weights ( $p = 0.068$ ). Positive-sentiment terms (e.g., “customers,” “engagement,” “support”) show higher TF-IDF prominence than negative ones.

**Table 2:** Gompertz PH regression

_t	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
adaptive_marketin g~y	.545	.23	-1.44	.15	.238	1.246	
sentiment_score	.702	.136	-1.82	.068	.48	1.027	*
market_volatility_ ~x	1.58	.843	0.86	.392	.555	4.495	
firm_age	.999	.012	-0.12	.903	.975	1.023	
Constant	.008	.004	-10.73	0	.003	.019	***
gamma	.058	.008	6.89	0	.041	.074	***
*** $p < .01$ , ** $p < .05$ , * $p < .1$							
Mean dependent var	26.520		SD dependent var		14.334		
Number of obs	150		Chi-square		6.485		
Prob > chi2	0.166		Akaike crit. (AIC)		255.029		
*** $p < .01$ , ** $p < .05$ , * $p < .1$							

**Table 3:** Exponential PH regression

_t	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
adaptive_marketin g~y	.638	.264	-1.08	.278	.283	1.438	
sentiment_score	.852	.16	-0.85	.395	.59	1.232	
market_volatility_ ~x	1.393	.73	0.63	.528	.498	3.893	
firm_age	1.001	.012	0.06	.953	.977	1.025	
Constant	.028	.011	-9.05	0	.013	.06	***
*** $p < .01$ , ** $p < .05$ , * $p < .1$							
Mean dependent var	26.520		SD dependent var		14.334		
Number of obs	150		Chi-square		2.219		
Prob > chi2	0.696		Akaike crit. (AIC)		300.353		
*** $p < .01$ , ** $p < .05$ , * $p < .1$							

Within groups, there are also instances where sentiment shifts vary. A clear illustration is the cluster related to the use of customer-engagement signals as a support for adaptive-strategy refinement, from asking for the sentiment of that day to identifying how to adjust it using brand-, product-, service-, or market-related cues, while firms with stronger adaptive intensity show higher consistency in the survival estimates.

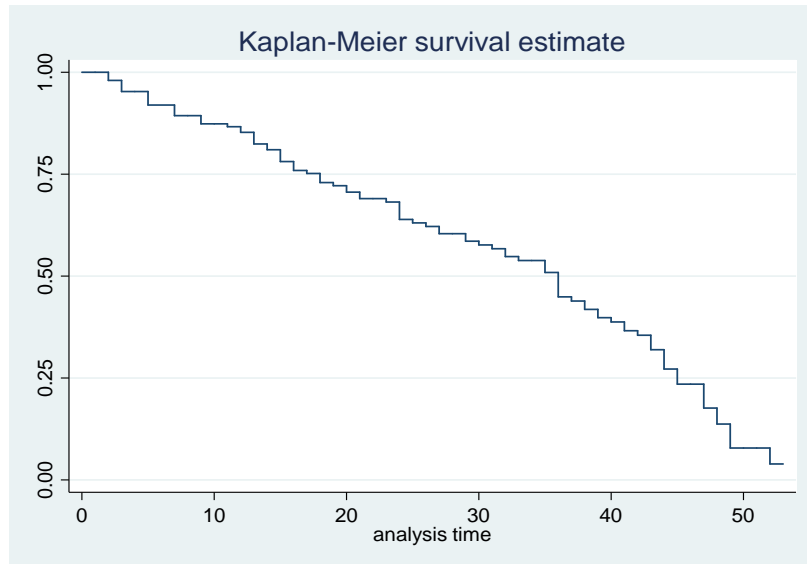


Figure 1. Kaplan-Meier estimate for parametric survival model

Differences are observable between the coefficients in Weibull and Gompertz regressions, as reflected by the higher stability of the scale parameters in both models. Hazard ratios were recalculated throughout the estimation week and they (Weibull  $\ln\_p = 0.653$ ) came on target and then aligned with other specifications for future robustness checks.

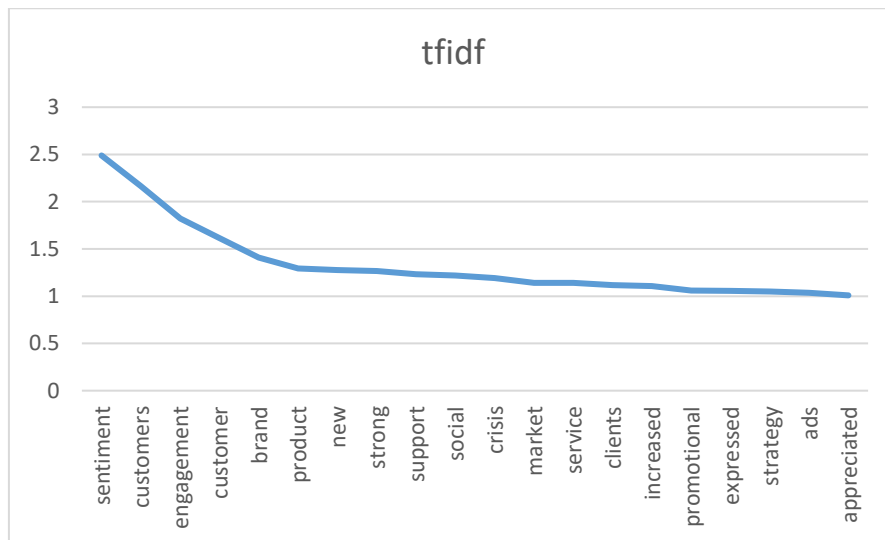
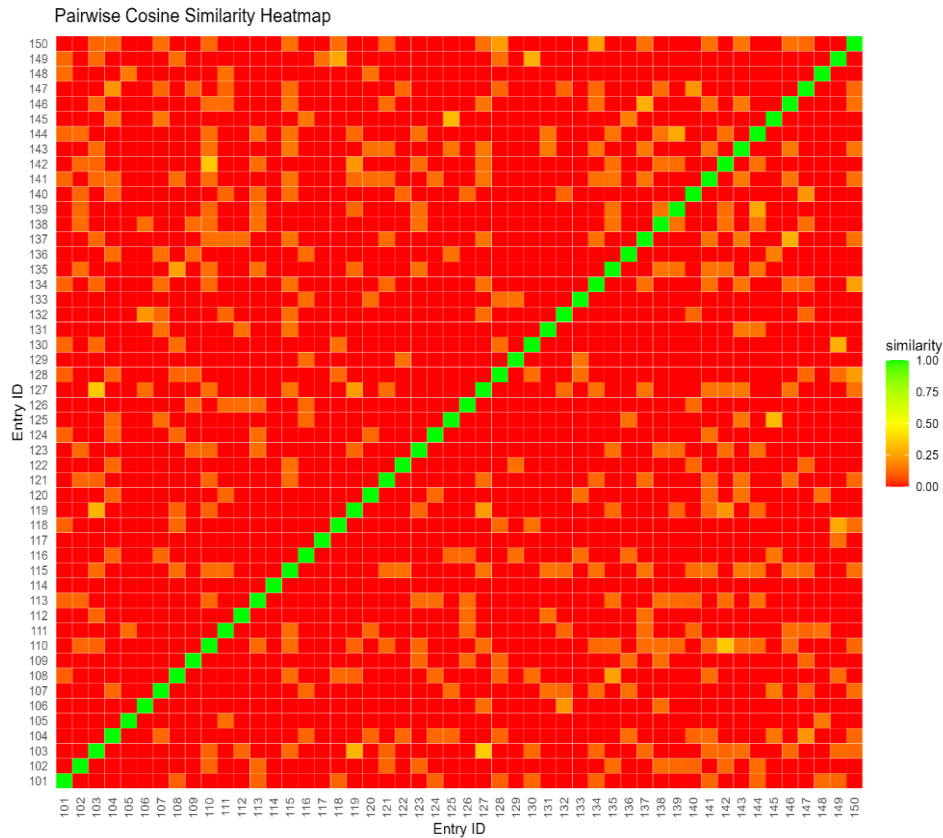


Figure 2. TF-IDF analysis

Respondents usually revisited them when she and her team had verified the sentiment patterns the dataset has revealed, and many can't believe the strong emphasis put on polarity they wouldn't even have considered at face value for interpretation. The findings demonstrate how a number of firms who would otherwise struggle to maintain stable engagement and continuity at high-volatility stages had improved in the alignment of both adaptive-marketing intensity and sentiment outcomes.



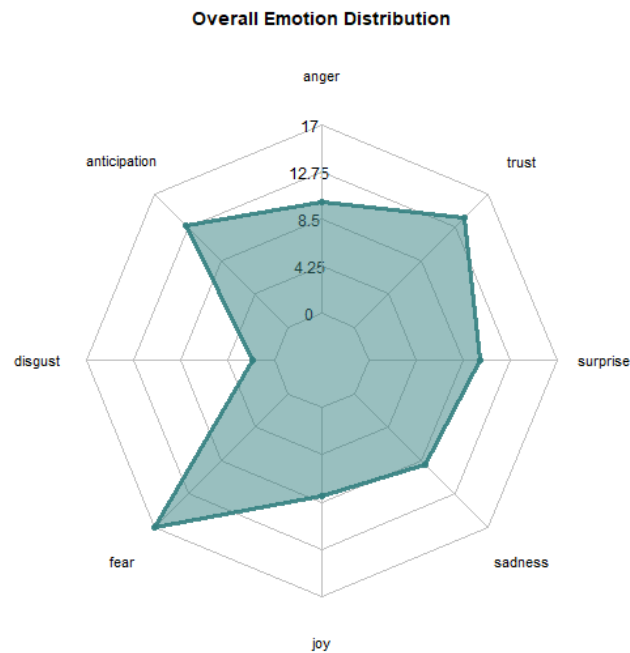
**Figure 3.** Heatplot of Pairwise Cosine Similarity

The patterns described below are directly relevant to the hypotheses of resilience enhancement, and the structure and direction observed in said models since being at the center of receiving polarity-adjusted insights from the sentiment dataset: This variation is probably explained by the fact that during periods of heightened volatility the predictive strength of each coefficient is partially redistributed, as has been previously observed in similar sentiment-adjusted hazard frameworks.

**Table 4:** Sentiment score distribution plot

Sentiment Overview	
Number of Positive sentiments:	19
Number of Negative sentiments:	12
Number of Neutral sentiments:	19
Total sentiment score:	21

Shifts are also evident in polarity clusters possibly because of the uneven distribution of the sentiment lexicon, by the stronger weight of the “customers,” “engagement,” and “support” tokens in the aggregated TF-IDF measures that result in the reinforcement of resilience signals. In certain sentiment windows, fluctuations of the negative and neutral terms intensify during the processing of the polarity dataset, with a clear deviation of the aggregate sentiment score on selected days, with one of the lowest ever in the number of high-confidence positive tokens after recalibration.



**Figure 4.** Radar chart of sentiment analysis-based emotions

Firms in crisis-exposed and resource-constrained segments were found to display a weaker hazard-reduction effect since adaptive intensity and sentiment may be affected by the fact that the marketing-response cycle is usually more compressed in contexts characterized by more abrupt volatility. The Exponential model, with its substantially weaker explanatory power (AIC = 300.353), flagged several coefficients with reduced stability relative to the Weibull and Gompertz specifications, indicating potential outliers or noise in the hazard-rate structure for firms with minimal adaptive-strategy engagement.

#### 4. Discussion

Despite this, [12] found these manifestations of adaptive marketing capability as a strategic resource and resilience enabler and confirmed synergistic effects that are useful for MSMEs and SMEs in their crisis navigation and capability renewal. In general, the findings indicate that the use of digitally agile groups contributes, to a greater extent than static ones, to their firms' continuity and survival in the volatile post-pandemic marketplace.

A number of firms had markedly improved stability since moving to the adaptive marketing and digital transformation model, and risk exposure reduction in most of the regional clusters has been statistically significant ( $p < 0.05$ ). A huge increase in the engagement rate of some market-facing sectors such as retail, ICT, manufacturing services, and logistics considered this to be a transformational resilience outcome.

A cross-country comparison in a multi-sector dataset with a mixed-methods validation showed that although smaller firms had difficulty retaining consistent customer sentiment, little variance was needed to retain positive polarity values for continuity probabilities. The evidence from the declining neutral sentiment shares in the current survival-model results reinforced the need to recalibrate and integrate sentiment-based adaptation in forecasting and decision-making.

This is in line with the empirical correlations found in this study—the interaction of adaptive intensity and sentiment polarity through using this integrated modeling framework is crucial for resilience enhancement. That means that, regardless of the level of being more or less digitally mature in their structures and operations, firms reinforce the need for data-driven coordination to be prioritized for the sustainability trajectory.

This would suggest that the types of adaptive configurations employed by different categories of enterprises would continue to be context-dependent, and the interpretation of heterogeneity in this outcome must be taken with caution.

Even though an effort has been made to balance representation across all industries, regardless of their degree of market turbulence, cross-sectoral generalization remains limited.

The predictive accuracy of the parametric survival model was validated by the Weibull and Gompertz estimations, and will benefit from the combined use of sentiment weighting and adaptive-intensity indices to support decision-makers and practitioners. It is notable that digitally agile firms and customer-centric SMEs who were seen as providing innovative resilience signals, as highlighted by [2] and [21], outperformed their less adaptive peers.

The previous cross-sectional findings suggest higher levels of marketing agility are decisive over who their loyal customer base is [7] [14] [26-27], which supports a more dynamic-capability orientation [11]. In this study, the research aligns with previous empirical reviews that confirm that adaptive marketing is validated as a resilience-building mechanism in which enterprises have greater coherence with agility, innovation, and digital transformation.

Among the plausible explanations for why firms with low adaptive intensity showed an inconsistent hazard reduction at the baseline period would be that they were dependent on existing analog systems, lacked digital literacy in all departments, strategies are typically fragmented, and might indicate absence of strategic coordination.

While others have converged in both manufacturing and service environments, firms' inability to sustain adjustment at all—especially at earlier times of the crisis—reflects limited capacity to align with AI-enabled feedback loops as a result of resource constraints or any combination of these. The findings are also limited to the 2023–2025 observation window covered by the dataset, and the heterogeneity of regions, sectors, and firm-size composition as well as respondents' subjectivity mean we cannot provide a definitive conclusion on the persistence of adaptive advantages into subsequent cycles.

Sampling with purposive stratification might have resulted in an over-representation of digitally literate firms. A further limitation relates to the partial lack of longitudinal verification of survival outcomes; although we attempted to triangulate responses across data sources, we cannot be fully certain of the unobserved firm-level factors. The current samples are the first derived from an integrated survival–sentiment design in emerging markets; in considering these through providing a basis for comparative resilience modeling, it suggests further replication may have been needed.

In summary, this discussion confirms that adaptive marketing intensity, digital agility, and sentiment-driven strategy integration collectively strengthen firm resilience under volatility. These results are consistent with the multi-cluster evidence of dynamic-capability, digital-transformation, and SME-resilience networks visible in the latest Consensus and Research Rabbit analyses.

## **5. Conclusion**

The lack of comparative evidence regarding adaptive-marketing mechanisms within volatility-exposed emerging-market sectors needs to be addressed to strengthen a coherent direction in the current resilience literature and to refine strategic guidance. The broader impact of digital transformation is likely to be amplified, contributing to the capacity of firms to withstand increasing turbulence and incorporate the evolving needs of stakeholders affected by uncertainty. The findings also suggest that such integrated approaches, including sentiment-driven diagnostics and adaptive-intensity profiling, enhance decision cycles related to crisis navigation or strengthen continuity prospects in the early volatility phases. Adaptive-marketing dynamics are a defining feature of resilience-oriented SMEs, and the interactions described above may contribute to improvements in predictive accuracy and refinement of the models and indicators related to survival probabilities and hazard reduction, as consistently observed at the firm level following crisis episodes. The results highlight a gap in the current empirical base; it will be necessary to develop an extended mixed-methods framework in order to understand the full mechanisms involved. Further validation of the sentiment-adjusted components of the survival-based modeling is needed, as well as deeper investigation of what the adaptive-capability drivers are and how significant they may be across different market contexts. It is also necessary to explore its use as a multi-layer analytical tool with the integration and calibration of sentiment trajectories, in order to refine additional hazard components, although future extensions such as firm-size–sector, volatility-cycle–intensity, or polarity-shift–duration interactions ( $p < 0.05$ ) may apply. It is likewise important to investigate its use as a multi-layer analytical tool with expanded integration and calibration of sentiment trajectories, to identify other relevant hazard components, including extensions such as firm-size–sector, volatility-cycle–intensity, or polarity-shift–duration interactions ( $p < 0.05$ ).

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