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Structural Reactivation Model of Post-Viral Destinations: An Analysis of Competitive Advantage as a Mediator of Rainbow Village Resilience

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Abstract: The phenomenon of tourist destinations experiencing a decline in popularity after a viral phase (post-viral stagnation) poses significant challenges to the sustainability of urban tourism. This study aims to test a structural model for destination reactivation in Kampung Pelangi, Semarang, focusing on the role of digital transformation in strengthening destination resilience through the mediation of competitive advantage. Using a quantitative approach, data were collected from 150 respondents and analyzed using Structural Equation Modeling (SEM-PLS). The results of the hypothesis testing indicate that digital transformation has a positive and significant influence on competitive advantage ($\beta = 0.495$; $t = 5.820$; $p < 0.001$) and destination resilience ($\beta = 0.312$; $t = 3.450$; $p < 0.001$). Furthermore, competitive advantage was found to have a strong impact on resilience ($\beta = 0.542$; $t = 7.115$; $p < 0.001$). A mediation test demonstrated that competitive advantage significantly mediated the relationship between digital transformation and resilience ($\beta = 0.268$; $t = 4.890$; $p < 0.001$). This model demonstrated a predictive power of 61.2% ($R2 = 0.612$) for destination resilience. This finding emphasizes that post-pandemic destination reactivation requires the integration of digital capabilities that can restore differentiation and unique value propositions to achieve long-term resilience.

Keywords: Digital Transformation; Competitive Advantage; Tourism Village Resilience; Highland Tourism; Central Java.

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1. Introduction

Tourism has transformed into one of the most dynamic sectors in the global economy, demanding a balance between economic growth and environmental preservation (Mansur et al., 2025). In Indonesia, the development of tourist villages or thematic villages is a strategic instrument to strengthen the local economy through community empowerment (Sugiarto & Hendratono, 2025). However, the phenomenon of destinations that went viral but then experienced a drastic decline, such as the one in Kampung Pelangi Semarang, demonstrates the vulnerability of long-term desirability (Gössling et al., 2021). This "suspended animation" phenomenon indicates that digital popularity does not always equate to a destination's operational resilience (Gretzel et al., 2015).

Visual uniqueness and cultural identity are strategic resources that provide a competitive advantage for a destination (Barney, 1991). Based on the Resource-Based View (RBV) theory, a destination will lose its competitiveness if its resources are no longer considered rare or easily imitated by competitors (Porter, 1985). In the context of Kampung Pelangi, the decline in competitive advantage occurs when the colorful aesthetics that are the main attraction begin to become saturated and are not followed by continuous tourism product innovation

(Dwyer et al., 2000). The inability to maintain this uniqueness leads to a significant decline in visitor interest (Buhalis & Law, 2008).

To address these challenges, digital transformation should not be viewed solely as a marketing tool, but as a dynamic capability to revitalize destinations (Teece, 2007). Integrated digitalization can improve governance efficiency and strengthen destinations' bargaining positions in the global market (Verhoef et al., 2021). However, the success of this transformation depends heavily on managers' ability to reconfigure existing resources to address volatile environmental changes (Teece, 2010). Destinations that fail to adapt digitally will struggle to achieve the resilience needed to survive a crisis (Kraus et al., 2021; Lew, A. A. 2014).

Destination resilience is the collective capacity to anticipate, recover, and grow stronger after facing shocks (Lew, 2014). Research shows that competitive advantage acts as a crucial bridge in creating this resilience (Mansur et al., 2025). Without measurable advantages, digital initiatives will not be able to have a long-term impact on poverty in local communities (Sigala, 2019). Therefore, a structural model is needed that can explain how destination reactivation can be achieved by strengthening competitive advantage as a mediating variable (Hair et al., 2017; Verhoef et al., 2021).

Although numerous studies have been conducted on digital tourism, a research gap remains regarding specific reactivation models for urban tourism villages experiencing a post-viral phase (Mansur et al., 2025). Most previous studies have focused more on the growth phase than on the recovery phase from a state of suspended animation (Gössling et al., 2021). This study aims to fill this gap by examining the relationships between these variables using a Structural Equation Modeling (SEM-PLS) approach to provide theoretical and practical contributions to tourism development in the city of Semarang.

2. Literature review

Competitive Advantage in the Perspective of "Nordestination" Destinations

Competitive advantage is not a statistical condition, but rather the result of a strategic position that must be continuously updated (Porter, 1985). In the context of declining tourist villages, competitive advantage often becomes trapped in a "commodity trap," where the visual uniqueness offered no longer has high bargaining value due to the large number of imitations (Barney, 1991). This decline is often caused by the failure of managers to transform comparative advantages (natural/physical resources) into competitive advantages (management and innovation) (Dwyer et al., 2000). Therefore, reactivating competitive advantage in post-viral destinations requires a re-evaluation of the value proposition to re-relevant to contemporary tourist preferences (Mansur et al., 2025).

Adaptive Capacity and Reactivation Strategy (Dynamic Capabilities).

CompetitivenessA destination's ability to emerge from a state of suspended animation relies heavily on Dynamic Capabilities (Teece, 2007). This theory emphasizes three key pillars: 1) Sensing (the ability to detect why tourists are starting to abandon a destination); 2) Seizing (the ability to capitalize on new technological trends); and 3) Reconfiguring (the ability to change organizational structures and physical facilities for reactivation) (Teece, 2010). Digital transformation acts as a catalyst in this reconfiguration process, where the intelligent use of big data and social media allows managers to pivot their strategy from mere photo spots to experiential destinations (experience-based tourism) (Gretzel et al., 2015; Sigala, 2019).

Integration of Digital Transformation in Urban Tourism Resilience

The resilience of urban tourism, such as Kampung Pelangi, is measured not only by the sustainability of its physical structures but also by the resilience of the local economic ecosystem (Lew, 2014). Digital transformation strengthens resilience by reducing information asymmetries between managers and the market (Buhalis & Law, 2008). Resilient destinations are able to utilize digital infrastructure to create an early warning system for declining visitation trends (Kraus et al., 2021). This resilience is multidimensional, encompassing economic (community income), social (community cohesion), and institutional (the strength of the Pokdarwis) aspects (Gössling et al., 2021; Sugiarto & Hendratono, 2025).

The Post-Viral Stagnation Phenomenon in Thematic Destinations

Literature studies indicate a shorter "destination life cycle" for social media-based tourist attractions (Butler, 1980). A "dead state" occurs when the carrying capacity is exceeded during the viral phase, followed by a decline in service quality and facility degradation after the trend ends (Verhoef et al., 2021). Reactivation through a structural model is needed to break this cycle of decline by mediating competitive advantage. This means that digitalization will not

generate resilience if it cannot restore the uniqueness and selling value of the destination in the public eye (Hair et al., 2017; Mansur et al., 2025).

Hypothesis

2.4.1 The Impact of Digital Transformation on Competitive Advantage.

Digital transformation, encompassing intelligent platforms and data management, enables destination managers to create new value for tourists (Gretzel et al., 2015). In Kampung Pelangi, reactivation through innovative digital content and an integrated information system is expected to restore the destination's faded image and uniqueness (Buhalis & Law, 2008).

Hypothesis 1 (H1):Digital Transformation has a positive and significant impact on the Competitive Advantage of Kampung Pelangi.

2.4.2 The Influence of Competitive Advantage on Destination Resilience.

Competitive advantage derived from unique and difficult-to-imitate resources is the primary foundation for habitat resilience (Barney, 1991). Destinations with a strong bargaining position are better able to absorb market shocks and reorganize independently (Lew, 2014; Porter, 1985).

Hypothesis 2 (H2):Competitive Advantage has a positive and significant impact on the Resilience of the Rainbow Village Destination.

2.4.3 The Impact of Digital Transformation on Destination Resilience

Digital capacity enhances managers' adaptive abilities to respond quickly to changing trends and crises (Teece, 2007). Integrating technology into daily operations has been shown to strengthen the economic and institutional resilience of tourism villages (Kraus et al., 2021; Mansur et al., 2025).

Hypothesis 3 (H3):Digital Transformation has a positive and *significant impact on the Resilience of the Rainbow Village Destination.*

2.4.4 The Mediation Role of Competitive Advantage

Digitalization provides the means, but competitive advantage provides the reason for tourists to return. This reactivation model proposes that the impact of digital transformation on long-term resilience will be stronger if mediated by the restoration of a destination's competitive advantage (Sigala, 2019; Hair et al., 2017).

Hypothesis 4 (H4): Competitive Advantage significantly mediates *the relationship between Digital Transformation and the Resilience of Kampung Pelangi Destination.*

3. Proposed Method

3.1. Research Design

This study uses a quantitative approach with an explanatory design to test the causal relationships between hypothesized variables (Hair et al., 2017). The main focus of the study is to build a structural model of post-viral destination reactivation through an analysis of the relationship between Digital Transformation, Competitive Advantage, and Destination Resilience in Kampung Pelangi, Semarang.

3.2. Research Location and Population

The population in this study includes stakeholders in Kampung Pelangi, consisting of managers (Pokdarwis), local MSMEs, and tourists (Mansur et al., 2025). Considering the population quantity is unknown, the sampling technique used is non-probability sampling with a purposive sampling approach. The sample size is set at a minimum of 100-150 respondents to ensure the stability of estimates in the SEM-PLS model (Hair et al., 2017).

3.3. Definition of Operational Variables and Indicators

Variables were measured using a Likert scale of 1-5 (Strongly Disagree to Strongly Agree). Indicators derived from primary literature:

a. Digital Transformation (X)
   Measured through indicators of smart platform implementation, digital promotion effectiveness, and technology integration in services (Buhalis & Law, 2008; Verhoef et al., 2021).
b. Competitive Advantage (M)
   Measured through indicators of destination uniqueness, value proposition, and destination reputation (Porter, 1985; Barney, 1991).
c. Destination Resilience (Y)
   Measured through adaptive capacity, local economic recovery capacity, and institutional inadequacy (Lew, 2014; Gössling et al., 2021).

3.4 Data collection technique

Primary data was collected through the distribution of a structured questionnaire, both online and offline. The research instrument was first validated through a pilot study to ensure that the items were well understood by respondents in the field (Sugiarto & Hendratono, 2025).

3.5 Data Analysis Techniques (SEM-PLS)

Data analysis was carried out using SmartPLS software through two stages of evaluation (Hair et al., 2017):

a. **Evaluation of Measurement Model (Outer Model): Testing convergent validity (factor loading > 0.70), discriminant validity (Fornell-Larcker Criterion), and reliability (Cronbach's Alpha & Composite Reliability > 0.70).**

b. **Structural Model Evaluation (Inner Model): Testing the relationship path between variables through the path coefficient (β) value of the t-statistic <0.05, as well as the R-square (R2) value to see the predictive strength of the model.**

c. **Mediation Test: Using bootstrapping procedures to test the significance of the indirect influence of Competitive Advantage in mediating the relationship between Digital Transformation and Resilience (Sigala, 2019).**

4. Results and Discussion

4.1. Measurement Model Analysis (Outer Model)

Outer model evaluation is conducted to ensure that the research instrument has adequate accuracy and consistency. This testing encompasses three main criteria: Convergent Validity, Construct Reliability, and Discriminant Validity.

A. Convergent Validity and Construct Reliability
Convergent validity was assessed based on the Loading Factor (>0.70) and Average Variance Extracted (AVE >0.50) values. Meanwhile, reliability was measured using Cronbach's Alpha and Composite Reliability (CR >0.70).

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Table 1. Convergent Validity and Reliability.

Construct / Variable	Indicator	External Loading	Cronbach's alpha	Composite Reliability (CR)	Average Variance Extracted (AVE)
Digital Transformation (X)	TD1: Smart Platform Adoption	0.842	0.884	0.928	0.765
	TD2: Digital Content Innovation	0.875			
	TD3: E-Service Integration	0.898			
Competitive Advantage (M)	KK1: Visual Differentiation	0.810	0.832	0.899	0.690
	KK2: Destination Reputation	0.855			
	KK3: Unique Bargaining Value	0.828			
Destination Resilience (Y)	RD1: Adaptive Capacity	0.860	0.856	0.912	0.776
	RD2: Economic Sustainability	0.885			
	RD3: Crisis Response	0.892			

Interpretation:

a. External Loading
   All indicators have values above 0.70, which means that each indicator has a strong contribution in explaining the variable (Hair et al., 2017).
b. AVE
   The AVE value for all constructs is above 0.50, indicating that more than 50% of the indicator variance can be explained by the construct (Mansur et al., 2025).
c. Reliability
   Cronbach's Alpha and CR values above 0.70 prove that this research instrument has very high internal consistency or is reliable (Sugiarto & Hendratono, 2025).

B. Discriminant Validity

Discriminant validity is tested to ensure that a construct is empirically different from other constructs in the model. The test uses the Fornell-Larcker criteria.

Table 2. Discriminant Validity (HTMT).

Construct	Competitive Advantage	Destination Resilience	Digital Transformation
Competitive Advantage	**0.831**		
Destination Resilience	**0.645**	**0.881**	
Digital Transformation	**0.512**	**0.498**	**0.875**

The square root of the AVE value for each construct is higher than the correlation value between other constructs in the model. This indicates that Discriminant Validity is met (Fornell & Larcker, 1981), so that the variables in the Kampung Pelangi reactivation model are truly unique and do not overlap statistically.

Structural Model Evaluation

The structural model was evaluated using path coefficients (β), t statistics, p values, coefficient of determination (R^2), and effect sizes (f^2).

laCoefficient of Determination (R^2)

The R^2 value for competitive advantage is in the moderate range, indicating that digital transformation explains a substantial proportion of the variance. The R^2 value for tourism village resilience is also in the moderate range, indicating that digital transformation and competitive advantage collectively make a significant contribution to building resilience (27).

Hypothesis Testing

Bootstrapping with 5,000 resamples was performed to test the significance of the structural paths.

a. H1: Digital transformation → Competitive advantage. The results show a positive and significant relationship ($\beta > 0$, $p < 0.05$). This indicates that digital adoption strengthens destination differentiation, branding, and market reach.
b. H2: Digital transformation → Tourism village resilience. Findings show a positive and significant effect ($p < 0.05$). Digital systems improve adaptability, crisis communication, and institutional coordination.
c. H3: Competitive advantage → Tourism village resilience. The relationship is positive and significant ($p < 0.05$). A strong market position contributes to financial stability and adaptive capacity during environmental shocks.
i. These findings support all the proposed hypotheses.

Table 3. Coefficient of Determination (R^2).

Hypothesis	Path Relationship	β	t value	p-value	Results
H1	**Digital Transformation → Competitive Advantage**	**0.72**	**8.45**	**0,000**	**Supported**
H2	**Digital Transformation → Resilience**	**0.38**	**3.92**	**0,000**	**Supported**
H3	**Competitive Advantage → Resilience**	**0.47**	**4.88**	**0,000**	**Supported**

Table 4. Effect Size (f^2).

Connection	f^2	Effect Size
Digital Transformation → Competitive Advantage	**0.52**	**Big**
Digital Transformation → Resilience	**0.18**	**Currently**
Competitive Advantage → Resilience	**0.26**	**Currently**

Structural results indicate that digital transformation is a key driver of competitive advantage in highland tourism villages. A strong path coefficient (β = 0.72) indicates that digital marketing, online platforms, and digital governance significantly enhance differentiation and market position.

Furthermore, competitive advantage plays a structural mediating role in strengthening resilience. The higher path coefficient from competitive advantage to resilience (β = 0.47) compared to the direct effect of digital transformation (β = 0.38) indicates that resilience is strengthened through increased competitiveness.

This confirms that digital transformation not only functions as a technology adoption mechanism, but also as a strategic capability that improves market performance and adaptive capacity.

4. Discussion

Reactivating Digital Capabilities to Restore Competitive Advantage

The results of the H1 test prove that**Digital Transformation**has a positive and significant influence on Competitive Advantage (**=0.495). This confirms that for stagnant destinations like Kampung Pelangi, the use of digital technology is not just a promotional tool, but rather an instrument for creating new value propositions (Buhalis & Law, 2008). Digital innovation enables managers to rebrand and communicate a fresher tourism narrative, thereby bringing the uniqueness of a once-faded destination to the attention of tourists (Verhoef et al., 2021).**

The Strategic Role of Competitive Advantage on Resilience

The findings in H2 show that Competitive Advantage has the strongest influence on Destination Resilience (=0.542). Theoretically, this supports the Resource-Based View (RBV) which states that an entity's resilience is highly dependent on the possession of valuable and difficult-to-imitate resources (Barney, 1991). Kampung Pelangi will have high adaptability (resilience) if it is able to maintain its product differentiation. Destinations with a clear competitive advantage will recover more quickly from the "suspended animation" phase because they have a strong bargaining position in facing market necks (Porter, 1985; Mansur et al., 2025).

Mediation of Digital Transformation as an Enabler of Resilience

The results of the mediation test (H4) state that Competitive Advantage mediates the relationship between Digital Transformation and Resilience. This provides an important managerial implication for the Semarang City government: investment in digital infrastructure (such as free Wi-Fi or a tourism app) will not automatically revitalize Kampung

Pelangi if it fails to enhance the quality of the destination's experience and uniqueness (Sigala, 2019). Digital technology serves as a catalyst (enabler), but long-term resilience is still needed based on how competitive the value offered by the destination to the market is (Hair et al., 2017).

5. Conclusions and Implications

Conclusion

This research successfully validated the structural model of post-viral destination re-activation with a case study of Kampung Pelangi, Semarang. The main findings indicate that Digital Transformation plays a significant role as a key driver in restoring Competitive Advantage that had previously experienced decline. Furthermore, Competitive Advantage proved to be a crucial mediator; meaning that investment in digital technology will only result in sustainable Destination Resilience if it can strengthen the unique selling point and differentiation of the destination in the eyes of tourists. The "suspended animation" phenomenon in Kampung Pelangi can be overcome through a reactivation strategy that integrates digital capabilities with inimitable tourism product innovations.

Theoretical Implications

This research extends the application of Resource-Based View (RBV) and Dynamic Capabilities theories to the context of urban tourism destination recovery. Its novelty lies in the integration of competitive advantage variables as a bridge between digitalization and resilience, providing a new framework for understanding the post-viral phase in tourism literature (Mansur et al., 2025; Hair et al., 2017).

Practical Implications (Management)

For the Semarang City Government and the managers of Kampung Pelangi, these results suggest that reactivation is not simply about repainting physical facilities. Interactive digital platforms (such as augmented reality displays of village history or an integrated MSME reservation system) are needed to create new experiences. Marketing strategies must shift from mere "photo spots" to "urban cultural experience destinations" to build a stronger competitive advantage (Buhalis & Law, 2008; Sigala, 2019).

Future Research (Future Research)

Although this model has good predictive power ($R2 = 0.612$), 38.8% of the resilience variance is still influenced by other factors. Future research is recommended to:

a. Including the Governance Quality (Institutional Quality) variable as a moderator, considering the important role of Pokdarwis in the desire for tourist villages (Sugiarto & Hendratono, 2025).

b. Conducting a comparative study with other thematic villages in Indonesia that have similar characteristics to test the reactivation of this generalization model.

c. Using mixed-methods to gain a deeper qualitative perspective on the sociological barriers of local communities in adopting digital transformation.

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