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## Digital marketing innovation and post-pandemic recovery: a comparative study of private hospital visitation in Bali's tourism-dependent economy

**Abstract.** This study investigates how digital innovations contributed to increasing patient visits to private hospitals in Bali, a region heavily dependent on tourism, in the aftermath of the COVID-19 pandemic. By applying Rogers' Diffusion of Innovations theory along with Mediascape theory, it explores how regulatory limits - specifically Indonesia's Health Minister Regulation No. 1787/2010 - and Bali's tourism reliance influenced the adoption of digital marketing strategies. Data collected from interviews with directors and marketing teams from 20 private hospitals, combined with content analysis of platforms like Instagram, YouTube, Facebook, TikTok, and hospital websites, reveal key outcomes. During the pandemic, many hospitals faced a sharp decline in non-COVID patient visits, with 25% experiencing drops exceeding 50%, and overall declines averaging between 30% and 50%. Prior to the pandemic, only one-third of hospitals used websites for promotion; after COVID-19, Instagram became the leading platform at 55% adoption, followed by multi-platform approaches at 10%, and Facebook at 15%. The shared digital content mainly consisted of service details (60%), health education (10%), and webinars (30%). Notably, 90% of hospitals reported a rise in patient visits correlated with their digital promotion efforts. Instagram had the highest effect on attracting visitors but entailed moderate regulatory challenges, while YouTube provided moderate benefits with fewer regulatory concerns. Regulatory constraints included bans on discount promotions and limited cross-border patient outreach, differing from European standards. The study concludes that despite these legal restrictions, digital promotion was effective in aiding recovery, offering a model adaptable to other emerging tourism economies, such as those in the Mediterranean and Southeast Europe.

**Keywords:** Service; Hospital Patient; Bali; Medicine; Innovation Diffusion; Digital Promotion; Global Technology; COVID-19; Social Media

**JEL Classifications:** E24; E41; E64; I18; J28; J31

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## 1. Introduction

The diffusion of innovations - understood as the cultural transmission of new ideas and technologies - fundamentally reshapes economic landscapes by introducing perceived advantages and compatibility with existing practices. This process, inherently human-driven (Verganti et al., 2020), provides a critical lens for examining how digital promotion innovations catalyze recovery in service sectors disrupted by global crises. Nowhere is this more evident than in tourism-dependent economies like Bali, where private hospitals faced catastrophic visitation declines due to COVID-19 contact restrictions (WHO, 2020). Unlike European health systems that leveraged institutional networks for pandemic response, Bali's hospitals operated under unique constraints: Indonesia's Ministerial Regulation No. 1787/2010 prohibited conventional health promotions involving discounts or direct community outreach, forcing rapid digital adaptation in an already fragmented tourism economy.

Digital promotion - defined as technology-mediated audience engagement - emerged as a strategic imperative during the pandemic. As physical interactions diminished, global technology usage surged, with social media platforms reaching 42.3% of the world's population by 2022 (Appel et al., 2020). This shift proved particularly consequential for healthcare, where traditional promotion channels collapsed just as health information demand peaked (Mo et al., 2021). Hospitals worldwide responded by accelerating telemedicine and virtual care (Bokolo, 2020), yet Bali's private institutions faced dual challenges: navigating stringent promotional regulations while countering patient avoidance. The resulting innovation vacuum reveals an understudied economic phenomenon - how resource-constrained hospitals in isolated tourism economies harness digital diffusion for recovery.

Theoretically, this study bridges Rogers' innovation diffusion framework - which analyzes technology adoption patterns (Oliu-Barton et al., 2022) - with mediascape theory's emphasis on platform power (Nordin et al., 2021). While European health systems prioritized cross-border patient mobility through policy coordination (e.g., Serbia's medical tourism corridors), Bali's hospitals innovated within a regulatory environment prohibiting conventional outreach. This divergence highlights a critical research gap: the role of digitally mediated promotion in service-sector recovery when traditional mobility and marketing are constrained - a challenge equally relevant to Southeastern Europe's emerging health tourism destinations.

Existing literature extensively documents pandemic-driven digitization in healthcare (Attaran, 2023) and the rise of social media for health communication (Rudolf et al., 2022). However, few studies examine how regulatory contexts in tourism-reliant emerging economies shape digital promotion efficacy. Research on Bali specifically remains scarce, despite its paradigmatic status as an island economy where health sector viability intertwines with tourism flows. This omission is economically significant: outpatient declines not only threatened hospital sustainability but also disrupted ancillary services and employment - a vulnerability shared by Mediterranean and Adriatic health tourism hubs.

This study therefore investigates how Bali's private hospitals deployed digital promotion innovations (Instagram, YouTube, Facebook, TikTok, websites) to rebuild patient volumes post-COVID. It asks: How did regulatory constraints and tourism dependency shape digital diffusion pathways, and what comparative lessons emerge for similar emerging economies? By mapping adoption barriers, platform effectiveness, and visitation outcomes, we contribute to innovation economics literature in three ways:

- 1) documenting a regulatory-adaptive model for health promotion,
- 2) providing empirical evidence of digital recovery in isolated service economies,
- 3) establishing transferable insights for Southeastern Europe's post-pandemic health tourism strategies.

## 2. Brief Literature Review

Innovation diffusion theory elucidates the communication process through which novel ideas penetrate institutional or individual practice. Innovation encompasses ideas, products, procedures, or technologies perceived as new within specific contexts. This perceptual relativity is economically significant: when healthcare institutions adopt digital promotion tools under regulatory constraints, their «newness» derives not from technical sophistication but from alignment with local practice (Dabija et al., 2022). Diffusion occurs through media transmission across social systems over time, driven by stakeholders' recognition of comparative advantages. Crucially, this

process relies on communication channels - interpersonal or mass media - that facilitate idea transmission, a dynamic particularly relevant to Bali's regulated health promotion landscape.

Social systems - shaped by customs, norms, and values - function as conduits or barriers to innovation adoption. Their structure determines how innovations navigate institutional hierarchies and social networks to achieve collective problem-solving (Bhimani et al., 2019). In health-care contexts, this explains divergent digital adoption patterns: where Southeastern European hospitals leveraged established tourism networks for cross-border patient acquisition during COVID-19, Bali's socially fragmented tourism economy constrained conventional outreach, accelerating reliance on mediascapes. Mediascape theory (Moniz & Howard-Spink, 2021) complements diffusion frameworks by analyzing how platforms like Facebook or Instagram disseminate information globally, transcending geographical isolation. This capability proved vital during pandemic mobility restrictions. Online mediascapes not only enabled real-time health communication (Ren & Xu, 2023) but also reconfigured economic relationships between healthcare providers and tourism-dependent communities - an understudied dimension in innovation economics.

Existing research inadequately addresses how regulatory environments shape digital health promotion in emerging tourism economies. Studies confirm social media's role in health information dissemination and pandemic discourse evolution, while others document institutional web/Facebook usage (Durowaye et al., 2022).

### 3. Methodology

This study used a qualitative descriptive method through literature studies, questionnaires, and interviews, and data analysis was carried out deductively. The descriptive data obtained was analyzed, namely, the data was analyzed from the results of literature reviews, questionnaires, and interviews. Data analysis is carried out deductively, namely, the process obtained from theory is adjusted to the facts obtained through literature reviews, questionnaires, and interviews.

This study used qualitative research methods involves a researcher who has a deeper level of criticism in all research processes. The process of collecting data in design research can be done through observation and interviews. Research in the form of text analysis or theoretical research can just use library data, so data collection can be done in the library or by reading books or articles, whether they are printed or can be accessed online. Qualitative methodology is needed to obtain an overview of the various experiences of private hospitals in Bali in conducting promotional activities. However, qualitative studies on the diffusion of digital promotion innovations related to service and health information in the era of the COVID-19 pandemic are still rare. The qualitative study aims to explore the experiences of informants in their daily activities related to the digital promotion of their hospitals. This research was conducted in 20 (twenty) private hospitals in Bali.

The data collection process in this study was carried out through observation and interviews with private hospitals in Bali during 2022-2023. The sampling method used in this study called propulsive sampling, which has certain considerations. This study used questionnaires and interview instruments. After that, the instrument was addressed to the director of a private hospital in Bali. Interviews were conducted with five informants, consisting of directors and marketing departments of private hospitals in Bali.

This study uses a qualitative phenomenological design which studies the hospital's experience of the impact of COVID-19. This selection was made because it focused on the most impacted hospitals and they had completed documented data, as well as easy access and full participation from hospital respondents. The sampling technique used purposive sampling because this study aims to gain a deep understanding of the solutions taken by hospitals to overcome the impact of COVID-19 through the diffusion of promotional innovations.

### 4. Results and Discussion

Private hospitals in Bali faced severe visitation declines during COVID-19, with directors confirming non-COVID patient reductions of 30-50% (Interviews, 2021). As shown in [Figure 1](#), this aligned with broader trends: 85% of surveyed hospitals reported significant drops, driven by infection fears and mobility restrictions. Crucially, these losses mirrored vulnerabilities in European tourism-dependent health economies but manifested differently: where Balkan hospitals leveraged policy-supported telemedicine, Bali's institutions confronted strict promotional regulations.

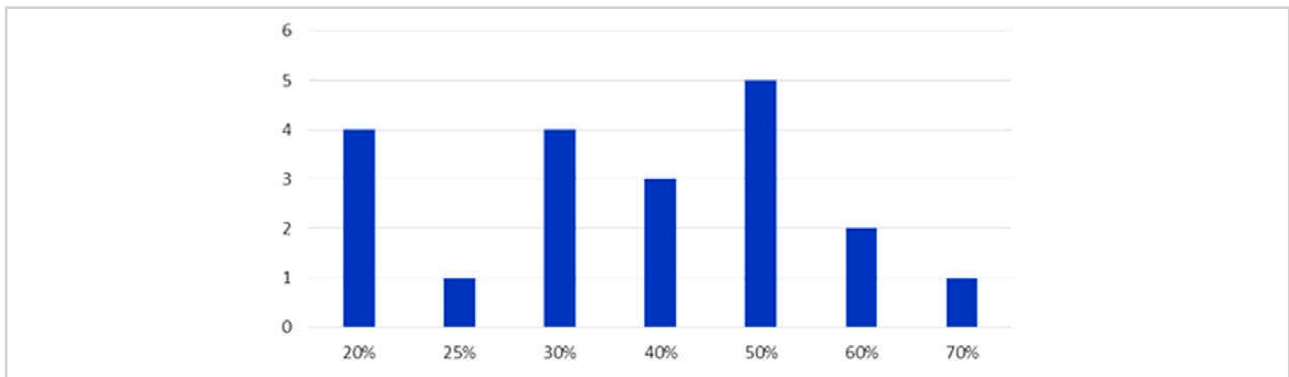


Figure 1:

### The percentage of patients visiting hospitals in Bali decreased during the Covid Pandemics

Source: Authors' own findings from the hospitals in Bali based on data of 2022-2023

As shown in Figure 2, pre-pandemic promotion relied heavily on conventional channels, with only 33% using websites. The pandemic-triggered shift to digital platforms was abrupt yet strategic: Instagram emerged as the dominant channel, while 10% deployed multi-platform strategies (see Figure 3). This contrasted with Southeastern Europe's slower, policy-guided digitization, revealing Bali's adaptive agility under constraints.

Content analysis revealed service information and health education as primary digital outputs. Instagram Live webinars - like Prima Medika's breast cancer series - exemplified innovation diffusion: replacing offline seminars with interactive, regulation-compliant formats (Meisner & Ledbetter, 2022). This generated measurable recovery (see Figure 4): 90% of hospitals reported visitation increases, demonstrating digital efficacy despite regulatory barriers.

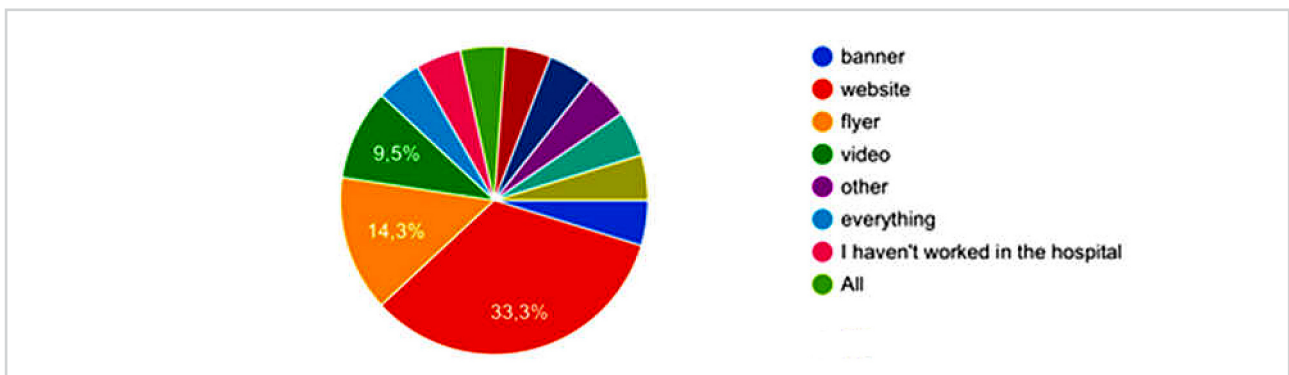


Figure 2:

### What form of promotional media was used in the hospital where they worked before the pandemic era?

Source: Authors' own findings

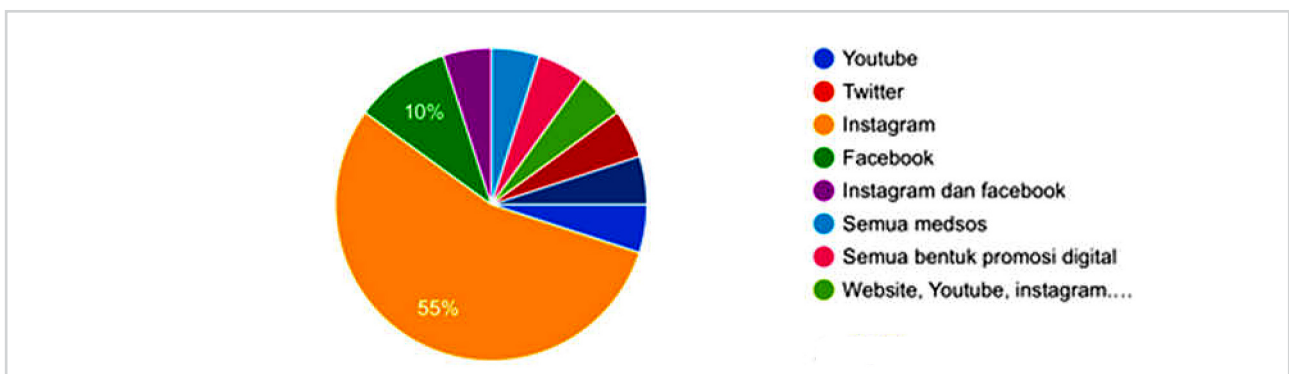


Figure 3:

### After the pandemic, has the hospital's promotional media changed?

Source: Authors' own findings



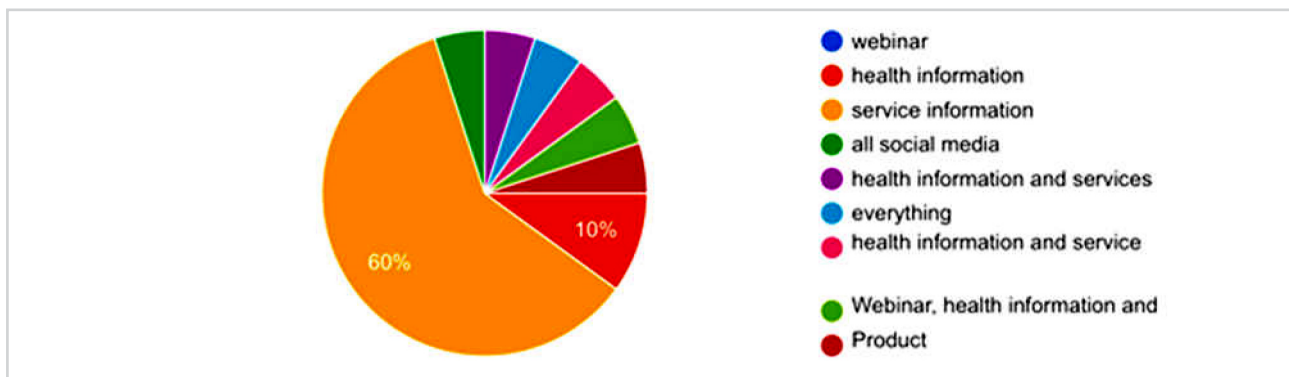


Figure 4:

**Result of the Questionnaire on information forms shared on promotion media**

Source: Authors' own findings

The rapid Instagram pivot reflects Rogers' diffusion theory in action: hospitals perceived digital platforms' relative advantage over banned conventional promotions (Alkhateeb et al., 2010). Mediascape theory explains their efficacy - transcending physical restrictions to reach 4.4 billion potential users. However, platform dependency introduced new risks: Instagram's algorithm changes could disrupt outreach, unlike Europe's diversified health tourism portals.

Regulatory alignment remained precarious. While hospitals exploited gaps in PERSI guidelines (2006), their digital activities occupied undefined legal territory - unlike the EU's harmonized health promotion framework. This necessitated persuasive rather than transactional messaging (e.g., webinars vs. discounts), constraining monetization pathways available to European counterparts.

The 90% visitation recovery underscores digital diffusion's economic value. Yet sustainability requires regulatory modernization: integrating platforms like TikTok (used by < 5% of hospitals) could enhance reach toward younger demographics - a lesson for Mediterranean health tourism hubs facing similar demographic challenges.

## 5. Conclusion

Private hospitals in Bali utilize global technology by leveraging social media platforms such as Instagram, Facebook, YouTube, TikTok, and websites to promote their health services and programs. They share digital content including videos, infographics, and blog articles to inform the public about hospital services, health-related topics, and COVID-19 updates. This innovative approach to digital promotion introduces new ideas and techniques which help raise awareness and build public trust in private hospitals. Research suggests that social media marketing efforts have been effective in increasing patient engagement, improving brand image, and attracting more visitors to these hospitals.

However, this study has some limitations. It focuses on a limited number of hospitals within specific regions, which restricts the ability to generalize the results widely. Quantitative measurement of the impact of digital promotion is challenging due to difficulties in accessing long-term outcome data. Using qualitative methods like interviews may introduce subjective interpretations influenced by the researcher's perspective. Additionally, the study centers solely on hospitals and does not consider other healthcare institutions. The research period mainly covers the COVID-19 pandemic, meaning the findings might not fully apply to normal circumstances or future scenarios. Despite these limitations, the study highlights the importance of effectively using digital promotion during crisis situations and offers valuable insights that can guide development of future digital marketing strategies in healthcare sector.

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