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Research Spotlights

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Impact of the General Data Protection Regulation on the Global Mobile App Market: Digital Trade Implications of Data Protection and Privacy Regulations (p. 669)
Ziru Li, Gunwoong Lee, T. S. Raghu, Zhan (Michael) Shi

Although regional data protection and privacy regimes are often cited as major barriers to crossborder digital trade, mitigating consumer privacy concerns through regulations can potentially increase the demand for foreign digital products or services. This study delves into this by assessing the impact of the General Data Protection Regulation (GDPR) on the global mobile app market. Contrary to the belief that such regulations hinder digital trade, our data show a notable post-GDPR increase in top foreign apps in European Union countries, suggesting that the GDPR may alleviate privacy concerns and encourage the adoption of foreign digital products. This finding is crucial for policymakers dealing with data and privacy issues as it indicates the potential of these regulations to balance economic growth with privacy and security protection. The study suggests that data and privacy regulations can address data concerns without significantly harming digital trade. Additionally, it uncovers an opportunity for multinational companies. Although compliance costs are higher, clear privacy regulations could lessen consumer domestic bias, opening doors to international markets. Therefore, evaluating privacy regulations' impact on global markets means considering both their benefits for demand and their costs for suppliers.

The Impact of Geographic and Social Proximity on Physicians: Evidence from the Adoption of an Online Health Community (p. 690)
Panpan Wang, Liuyi He, Jifeng Luo, Zhiyan Wu, Han Zhang

Despite the increasing popularity of telehealth, the diffusion of online health communities (OHCs) lags behind because of the limited physician participation. The low adoption levels of telehealth could be attributed to the social environment rather than a baseline reluctance to adopt. By utilizing a panel data set of physicians' adoption over eight years, we empirically investigate the impacts of geographically and socially close adopters and examined the interaction of proximity influences and competition in adoption. Our results suggest that positive effects of both geographic and social proximity influence on adoption when local competition among physicians on OHCs is low. The positive impact of socially close prior adopters increases with local competition, whereas that of geographically close prior adopters decreases with local competition. Therefore, online health communities could leverage proximity influence by incorporating information cues such as the cumulative adoption rates of close peers to facilitate physician adoption. However, the framing of information cues should consider interactions of competition and proximity influence. Platform managers need to balance the direct crowding-in effect of competition and the adverse moderating effect by which it diminishes the influence of geographic proximity, especially for low-title physicians. For high-title physicians, who are more independent, emphasize the usefulness of online platforms.

Deeper Down the Rabbit Hole: How Technology Conspiracy Beliefs Emerge and Foster a Conspiracy Mindset (p. 709)
Simon Trang, Tobias Kraemer, Manuel Trenz, Welf H. Weiger

Conspiracy theories are increasingly emerging as a threat to contemporary society. Prior research highlights the crucial role that information technology (IT) plays in accelerating the spread of these theories. However, mass media coverage suggests that the role of IT extends beyond mere dissemination as conspiracy theories often target the technology itself. In this research, we explore the prevalence of technology conspiracy beliefs—specifically, beliefs in technology-related conspiracy theories, the factors promoting these beliefs, and their consequences. Our findings reveal that technology conspiracy beliefs are widespread, affecting popular commercial technologies, such as Amazon Echo and Google Search Engine, as well as public technologies designed for societal well-being, such as contact tracing apps. Moreover, we demonstrate across four empirical studies that technology conspiracy beliefs reinforce a conspiracy mindset. This mindset is associated with a breakdown of social collaboration, constructive political discourse, and society's ability to respond to crises. Given that these beliefs impede the adoption of beneficial technology and foster a harmful conspiracy

mindset, they should be a primary concern for technology designers, managers, and policymakers. By identifying the perceptions of technology and its provider that promote these conspiracy beliefs, we provide initial insights into ways to mitigate their emergence.

Monitoring and Home Bias in Global Hiring: Evidence from an Online Labor Platform (p. 736)
Chen Liang, Yili Hong, Bin Gu

Online labor platforms increasingly use monitoring systems to manage remote workers. This study assesses whether and how these systems mitigate employer bias in hiring foreign versus domestic workers. Leveraging the exogenous introduction of a monitoring system for time-based projects on a leading online labor platform, we employ a difference-in-differences model to estimate the impact of monitoring systems on mitigating employers' tendency to bias against hiring foreign workers (home bias). Results indicate a significant reduction in home bias, along with a 15% increase in the hiring of foreign workers following the introduction of the monitoring system. The mitigation effect is notably stronger in high-routine projects or when employers lack prior positive experiences with foreign workers, two scenarios characterized by low external uncertainty and high internal uncertainty, respectively. Moreover, employers no longer exhibit a stronger home bias in scenarios of lower moral hazard risk or coordination costs. These findings lend support to the effectiveness of monitoring systems in mitigating employers' home bias through facilitating contractual control and coordination. Our study offers important implications for the design of online labor platforms and policymaking.

Learning Personalized Privacy Preference from Public Data (p. 761)
Wen Wang, Beibei Li

In the era of digital transformation, understanding personalized privacy preferences is essential for firms and policymakers to build trust and ensure compliance. Traditional methods rely on private data and explicit user input, which can be invasive and impractical. This paper introduces a novel framework that leverages public data, specifically social media posts, to predict individual privacy preferences. By employing deep learning and natural language processing, the framework extracts psychosocial traits such as lifestyle, risk preferences, and emotional states from public data, offering a nonintrusive and scalable approach. Findings reveal that psychosocial traits derived from social media provide greater predictive power than traditional private data. This model aids businesses and policymakers by offering a deeper understanding of user privacy concerns, enabling the development of effective privacy policies and practices. This innovative approach not only enhances consumer privacy control and trust but also optimizes data management for platforms and informs better regulatory decisions, showcasing the practical implications of utilizing public data for privacy preference prediction.

Time to Stop? An Empirical Investigation on the Consequences of Canceling Monetary Incentives on a Digital Platform (p. 781)
Dongcheng Zhang, Hanchen Jiang, Maoshan Qiang, Kunpeng Zhang, Liangfei Qiu

Digital platforms commonly use monetary incentives to motivate users to perform specific tasks. Existing studies have shown the effects of introducing such monetary rewards on task participation and performance on public platforms. However, little is known about the impact of canceling rewards, and particularly less attention is paid to corporate platforms. Our study examines the impact of canceling monetary incentives using quasi-natural experiments on a corporate platform. We find that canceling monetary incentives is not simply the reverse process of their introduction. Specifically, compared with the increase in task participation when rewards were initially introduced, canceling these rewards leads to a sharper decrease in participation. Additionally, although introducing rewards has no significant effect on task performance, canceling rewards causes a significant decline in performance. These results suggest that canceling monetary rewards has a net negative impact on task participation and performance. Furthermore, we examine the heterogeneity of this impact concerning user motivation types and working competency levels. We also discuss the similarities and differences between corporate and public platforms in the impact of monetary incentives. Our results provide important practical implications for enterprise information systems and general information systems regarding their design of incentive strategies.

Navigating Platform-Led Affiliate Marketing: Implications for Content Creation and Platform Profitability (p. 802)
Meilin Gu, Dengpan Liu, Subodha Kumar

Recently, some user-generated content (UGC) platforms have introduced shopping features to generate additional commission-based revenue from in-app transactions. These platforms allow creators to produce shoppable content, where promoted products are tagged with affiliate links, and in return, they earn a percentage of the commission the creators receive from merchants This paper aims to investigate the impact of this platform-led affiliate marketing business model on the key stakeholders. Employing a game-theoretic model, our study demonstrates that platform-led affiliate marketing can create a win-win situation for UGC platforms, creators participating in affiliate marketing, and consumers. Furthermore, even creators not participating in

affiliate marketing can sometimes benefit indirectly from other creators' participation. However, we find that platforms may not necessarily benefit from adopting this emerging business model because of potential losses in traffic revenue. These results carry significant managerial implications for platforms regarding whether and how to leverage affiliate marketing. Moreover, our findings suggest that creators may benefit from reducing their production efforts in the face of intensified competition. More importantly, optimal production decisions for creators can vary significantly, depending on specific factors contributing to heightened competition. These findings offer valuable insights that can guide creators in refining their production strategies.

Mobile Apps, Trading Behaviors, and Portfolio Performance: Evidence from a Quasi-Experiment in China (p. 828)
Che-Wei Liu, Sunil Mithas, Yang Pan, J. J. Po-An Hsieh

How do mobile apps influence individual investors' financial decisions and performance? This study answers this timely and important question by using rare archival data from a large securities company in China using a sample of 20,665 investors. The authors find that mobile app adoption does not affect investors' portfolio performance when one examines aggregate impacts using a binary indicator of mobile app use. Their additional analyses suggest that adopting mobile apps results in a noticeable decrease in time constraints, a proxy for transaction friction, and a modest increase in trend-chasing bias, reflecting tendencies toward myopic decision making. Because the reduction in time constraints can benefit investors' performance, the increase in trend chasing can be detrimental to investors' performance, these findings explain why mobile app adoption has no overall effect on portfolio performance. Further analyses of adopters' postadoption behaviors provide interesting insights and show that the mobile app usage intensity has an inverted U–shaped relationship with portfolio performance. The results are robust to using different samples or excluding high market volatility periods and by using a variety of methods, such as propensity score matching, dynamic matching, stacked difference-in-differences, or an instrumental variable approach.

Clocking in or Not? Optimal Design of a Novel Gamified Business Model in Online Learning (p. 847)
Yi Gao, Dengpan Liu, Subodha Kumar

Clocking-in cash-back (CIC), an emerging gamified business model in online learning, has recently garnered significant attention. CIC allows users to secure a full refund of the course fee through consecutive completion of specific tasks within a required time window. These tasks, known as clocking in, encompass activities such as daily assignments and sharing progress updates on social media. By employing this gamification system, the firm effectively monitors user efforts, categorizing them as winners or quitters based on clocking-in completion. In this paper, we examine how a firm should set the optimal time window for its course and how the time window is affected by context-specific factors. We identify two opposing effects associated with extending the time window on users' quitting time: the psychological disutility increasing effect (negative) and the effort cost decreasing effect (positive). Our results indicate that, as quitters' positive word-of-mouth effects increase, there are cases in which the firm should opt for shortening the time window. Additionally, we find that, as the marginal content creation cost rises, the firm may find it more advantageous to raise the difficulty level by shortening the time window. Our findings provide valuable insights that online learning firms can utilize to enhance their design of the CIC mechanism.

HyperCARS: Using Hyperbolic Embeddings for Generating Hierarchical Contextual Situations in Context-Aware Recommender Systems (p. 871)
Konstantin Bauman, Alexander Tuzhilin, Moshe Unger

Contextual situations, such as having dinner at a restaurant on Friday with the spouse, became a useful mechanism to represent context in context-aware recommender systems (CARS). Prior research has shown important advantages of using latent embedding representation approaches to model contextual information in the Euclidean space leading to better recommendations. However, these traditional approaches have major challenges with the construction of proper embeddings of *hierarchical* structures of contextual information, as well as with interpretations of the obtained representations. To address these problems, we propose the HyperCARS method that models hierarchical contextual situations in the latent *hyperbolic* space. HyperCARS combines hyperbolic embeddings with hierarchical clustering to construct contextual situations, which allows loose coupling of the contextual modeling component with recommendation algorithms and, therefore, provides flexibility to use a broad range of previously developed recommendation algorithms. We demonstrate empirically that HyperCARS better captures and interprets hierarchical contextual representations, leading to better context-aware recommendations. Because hyperbolic embeddings can also be used in many other applications besides CARS, we also propose the latent embeddings representation framework that systematically classifies prior work on embeddings and identifies novel research streams for hyperbolic embeddings across information systems applications.

study suggests that the prevalent hands-off, self-directed design approach, which relies heavily on learners' intrinsic motivation, can potentially neglect crucial aspects like achievement emotions and lead to disengagement. Our findings show that online learning providers can address this issue through motivational interventions based on situational achievement goals. Specifically, our results indicate that among three achievement goals, learning, performance-prove and performance-avoidance, the performance-prove goal is the most effective one in enhancing learner engagement and performance. Additionally, we discuss that a one-size-fits-all course design may not be the most effective strategy for maintaining high engagement. Customizing interventions based on learners' motivational behavior, prior performance, and social activity can significantly improve engagement. Learners with stronger prior performance benefit more from the performance-prove goal, whereas those with moderate performance levels gain from the performance-avoidance goal, and those with lower prior performance are positively influenced by the learning goal. Socially isolated learners respond best to performance goals.

Does Virtual Reality Help Property Sales? Empirical Evidence from a Real Estate Platform (p. 1011)
Zhenbin Yan, Zixuan Meng, Yong Tan

Virtual reality (VR) has emerged as a transformative addition to real estate platforms, creating an interactive three-dimensional (3D) environment for consumers to explore property information, revolutionizing property presentation. Using a large-scale data set from a leading real estate platform, we demonstrate that VR serves as an *efficiency enhancer* rather than a market value influencer. Specifically, VR reduces a property's selling time by 28%–49%, *without* influencing the selling price, challenging the conventional premise that VR may help increase selling price. Our further analysis highlights VR's role as a provider of rich and credible information: our findings reveal that properties requiring greater effort to evaluate, those of higher quality, or where agent service is lacking, benefit most from the technique. Our work benefits property sellers by identifying which properties are more suitable for VR presentation and showing VR as a technological supplement when agent service is not satisfactory. Platforms can leverage the result to target sellers to apply VR, particularly when resources are limited. The acceleration effect of VR can benefit agents by allowing them to manage properties more efficiently and help platforms to build an efficient and sustainable market.

How to Make My Bug Bounty Cost-Effective? A Game-Theoretical Model (p. 1031)
Leting Zhang, Emre M. Demirezen, Subodha Kumar

A bug bounty program (BBP) is an innovative crowdsourcing security solution increasingly adopted by organizations. We use a game-theoretical model to analyze how key characteristics impact BBPs and offer practical insights into managing a BBP as part of an organization's vulnerability management for better cost-effectiveness. Our findings indicate that organizations with high patching complexity should announce lower bounties, especially if they face limited security resources. BBPs should complement, not substitute, an organization's security characteristics. Evaluating patching complexity and security posture is crucial when designing a BBP. Furthermore, security researchers drive BBP performance. Higher productivity in researchers doesn't always require higher bounties even with high postdiscovery costs. Novice productivity can increase total costs if unit postdiscovery costs are high, whereas expert productivity consistently reduces costs. Organizations should disclose high-level product and information technology (IT) features to increase expert productivity. The number of security researchers in a BBP is important, but increasing their numbers doesn't always necessitate higher bounties. A larger crowd may not always be cost-effective. Lastly, enhanced legal protection for security researchers might not increase organizational risks, especially in organizations with robust security or less sophisticated IT infrastructure. Industrial associations and policymakers should consider these factors in standards and legal frameworks.

Does David Make A Goliath? Impact of Rival's Expertise Signals on Online User Engagement (p. 1054)
Ayushi Tandon, Swanand J. Deodhar, Abhas Tandon, Abhinav Tripathi

How can digital platforms and applications engage users? This question remains of foremost interest to managers of such digital settings. In this study, we offer an informational answer to this problem, showing that digital contexts that engage users through contests and competitions can leverage information signals about rivals to influence engagement. More precisely, *we show that the effect of relative and absolute information about rival expertise has a distinct influence on the focal user's engagement* in a two-player online vocabulary game. Our findings offer several recommendations for the formulation and disclosure of rival expertise information. First, we suggest that information about rival expertise should have a dynamic salience based on the actual gameplay outcomes. Second, we recommend that platforms collect information about players' motivational framing (competitive versus learning) and use it as input when disclosing rival expertise information, as we find significant heterogeneity based on their motivational framing in their responses to such information.

the growth of the affiliated e-commerce platform. As the first study to empirically examine the impact of voice AI adoption on e-commerce consumption, our paper provides valuable implications for e-commerce platforms and retailers leveraging voice-activated shopping.

The Effect of Popularity Cues and Peer Endorsements on Assertive Social Media Ads (p. 1167)
Ashish Agarwal, Shun-Yang Lee, Andrew B. Whinston

Social media platforms, like Facebook, often display assertive call-to-action (CTA) ads that encourage direct purchases or app installs. These ads can show popularity cues (e.g., number of "likes") and peer endorsements (e.g., friends who "liked" the ad). Although such signals can positively influence user engagement for informational ads, our research reveals they can backfire for assertive CTA ads. Through field tests on Facebook and incentive-compatible experiments, we find that popularity cues do not improve and that peer endorsements actually harm click performance on assertive CTA ads. The negative effect of peer endorsements is amplified when they come from dissimilar friends. Underlying this effect is users' persuasion knowledge getting activated; they view these signals as manipulative advertising tactics for the assertive CTAs, resulting in psychological reactance. However, the detrimental impact is mitigated when peer endorsements come from friends with similar preferences. For advertisers, our findings suggest discounting popularity and peer endorsement metrics when evaluating assertive CTA ad performance. Platforms, like Facebook, should also consider making these signals optional for such ads. Overall, exercising discretion with these social proof signals for assertive purchase/install messaging can improve advertising outcomes.

Promoting Security Behaviors in Remote Work Environments: Personal Values Shaping Information Security Policy Compliance (p. 1183)
Carlos I. Torres, Robert E. Crossler

Organizations worldwide face critical concerns related to cybersecurity threats and information security policy (ISP) compliance. Even though humans are the weakest link in the cybersecurity chain, information security professionals understand the importance of promoting individual information security behaviors because employees are also the first line of defense against ever-increasing cyber threats. Despite a recent trend of working from home, organizations do not make significant differences in their information security interventions for remote workers, relying mainly on VPNs as the only used tool, essentially making employees follow in-office standard information security policies because they are "virtually in-office." Our study suggests that organizations need to recognize the unique context of remote work and consider personal motivations when shaping information security practices. Furthermore, our study indicates that in order to motivate remote employees to follow secure information security practices, organizations should consider personal characteristics instead of focusing on generic interventions. For instance, our study compares onsite and remote workers, suggesting that personal values are more relevant in remote work settings. Our findings exemplify just one of the many potential personal characteristics to be considered, highlighting how personal values are important motivators for ISP compliance and how they differ for onsite and remote workers in their importance when following information security rules.

Understanding the Dynamic and Episodic Nature of Technostressors and Their Effects on Cyberdeviance: A Daily Field Investigation (p. 1196)
Yang Chen, Jose Benitez, Christy M. K. Cheung

From a management perspective, our results first reveal the detrimental impacts of daily technostressors on the functioning of an organization and its employees. Managers should be cognizant of these consequences and create a relaxing work environment or design tools to reduce technostressors. Managers can institute more daily breaks and ensure that employees have autonomy over when to take breaks and what they do during their break time. We also encourage executives to avoid using information and communication technologies to technologically invade the lives and personal time of employees in the evening after work. Second, to reduce the incidence of daily cyberdeviance, managers should offer assistance programs to their employees to teach them how to control or manage their emotional and cognitive resources and to better cope with techno-overload and techno-invasion. Third, the moderating effect of technology self-efficacy suggests that there are added benefits to selecting and training employees with high technology self-efficacy, as doing so not only helps employees to cope with techno-overload but also enables them to regulate their immediate emotions rather than engage in daily cyberdeviance at work.

Better Is Better? Signaling Paradoxes in Performance-Based Advertising (p. 1217)
Ran Pan, Juan Feng

Under performance-based advertising, firms pay only for measurable consumer actions, such as clicks or sales. However, these actions may result from factors other than effective advertising. For example, a high-reputation seller is more likely to generate more actions than a low-reputation seller. If such consumer actions are counted toward advertising performance, a high-quality firm is penalized because it has to pay more than necessary to signal its quality. Without addressing these paradoxes, it becomes increasingly challenging for a high-quality firm to signal its quality under the

performance-based advertising scheme. Our research extends advertising signaling theory, which primarily focuses on new products without an established reputation and assumes that the advertising reaches the entire market (e.g., Milgrom and Roberts 1986, Feng and Xie 2012). Instead, we consider products that may have an established reputation (e.g., newer versions of the iPhone) and allow for the scenario that not every market segment can be reached by the advertising. We identify two paradoxes that arise from performance-based advertising and discuss methods to mitigate these paradoxes by proposing different ways of measuring advertising performance.

Opening First-Party App Resources: Empirical Evidence of Free-Riding (p. 1228)
Franck Soh, Pankaj Setia, Varun Grover

Although platform owners create significant entrepreneurial opportunities for third-party developers, they frequently compete with them by entering the same markets. This study examines the impact of opening a first-party app's resources on rivals' innovation. Unlike prior research, which assumes that first-party apps have exclusive access to their resources, our study reveals that increased openness of first-party apps leads to free-riding benefits for rivals. This openness boosts rivals' consumer demand, thereby fostering greater innovation. Our findings show that rivals attract more consumers because of complementary offerings available through alternatives, rather than through improved experiences provided by third-party apps utilizing the first-party app's open resources. Our research provides two key implications. First, beyond platform openness, platform owners might consider first-party apps' openness as a strategy to enhance the ecosystem's evolvability. Second, third-party developers can enhance their innovation capabilities to better exploit the free-riding benefits stemming from the openness of first-party apps.

Timely Quality Problem Resolution in Peer-Production Systems: The Impact of Bots, Policy Citations, and Contributor Experience (p. 1242)
Vitali Mindel, Aleksi Aaltonen, Arun Rai, Lars Mathiassen, Wael Jabr

Online peer-production systems create value by enabling people to participate in the production of a common good such as an open encyclopedia by building freely on each other's work. Fixing quality problems in peer production in a timely manner is critical because millions of people rely on peer-produced content for learning and decision making. The longer low-quality content remains in place, the more it can harm the reputation of a peer-production system and diminish the capability of the system to maintain its contributor base. We study different mechanism affecting the timeliness of quality problem resolution in Wikipedia and find that the speedy resolution of quality problems depends on the successful integration of software robots (bots) and the careful calibration of policy citations to the different levels of experience among contributors. Most control mechanisms found in firm-based production do not apply to peer production, and instead, quality control in peer production must leverage the strengths of different contributors and harness the benefits of technological support and adaptive policy frameworks to improve productivity and achieve high-quality outcomes.