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THE ROLE OF SOCIAL CAPITAL IN DISASTER RESILIENCE A COMPARATIVE STUDY OF URBAN AND RURAL AREAS

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ABSTRACT

This study explores the role of social capital in enhancing disaster resilience, comparing urban and rural areas to identify key differences and similarities. Social capital, encompassing networks, norms, and trust that facilitate coordination and cooperation, is crucial for communities facing disasters. Using a comparative study approach, we conducted surveys and interviews in selected urban and rural areas to gather data on social capital dimensions and their impact on disaster resilience. Our findings reveal that while both urban and rural communities benefit from social capital, the mechanisms and outcomes differ significantly. In urban areas, formal networks and institutional support play a more significant role, whereas in rural areas, informal networks and community cohesion are more influential. These differences highlight the need for tailored disaster resilience strategies that leverage the unique strengths of each context. The study contributes to the literature by providing empirical evidence on how social capital functions in diverse settings and offers policy recommendations to enhance disaster resilience through community engagement and capacity building.

Keywords: social capital, disaster resilience, urban areas, rural areas, comparative study

INTRODUCTION

The significance of social capital in enhancing disaster resilience cannot be overstated, as it encompasses networks, norms, and trust that collectively enable communities to effectively respond to and recover from disasters (Aldrich, 2012). Social capital facilitates cooperation and collective action, which are crucial in disaster scenarios where resources and timely responses are critical (Putnam, 2000). The growing frequency and severity of natural disasters globally have underscored the need to understand and leverage social capital to bolster community resilience (IPCC, 2021).

Research has demonstrated that communities with strong social capital tend to have better disaster outcomes, as these networks provide emotional support, information dissemination, and resource mobilization (Nakagawa & Shaw, 2004). However, there remains a significant knowledge gap regarding the comparative role of social capital in urban versus rural settings, each characterized by distinct social structures and resource availabilities (Pfefferbaum et al., 2017). Urban areas, with their dense populations and infrastructure, contrast sharply with rural areas, which often rely more on close-knit community ties (Cutter et al., 2010). This study aims to fill this gap by examining how social capital operates differently in urban and rural contexts and its implications for disaster resilience strategies. By addressing these differences, the research seeks to provide insights that can inform tailored disaster resilience policies and interventions (Bourdieu, 1986). The analysis will draw on a comprehensive literature review, case studies, and comparative analysis to elucidate the role of social capital in varying contexts. Ultimately, this study endeavors to contribute to the broader discourse on disaster resilience and community development, offering practical recommendations for policymakers and practitioners.

The concept of social capital is integral to understanding community dynamics and resilience in the face of disasters. It encompasses the networks, norms, and trust that facilitate coordination and cooperation among community members, which are essential for effective disaster response and recovery (Aldrich, 2012). In urban areas, social capital often manifests through formal organizations and institutions that provide structured support during emergencies (Cutter et al., 2010). Conversely, in rural areas, social capital tends to be more informal, relying heavily on personal relationships and community cohesion (Brown & Kulig, 1996). This divergence highlights the importance of context-specific strategies for enhancing disaster resilience. While urban settings benefit from established infrastructure and resources, they may lack the tight-knit social networks that characterize rural communities (Pfefferbaum et al., 2017). This study seeks to explore these differences in depth, examining how social capital operates in urban and rural settings and its impact on disaster resilience. By comparing case studies from both contexts, the research aims to identify best practices and potential areas for improvement in leveraging social capital for disaster preparedness and response. Understanding these dynamics is crucial for developing effective policies and interventions that enhance community resilience across diverse settings (Norris et

al., 2008). Furthermore, this research contributes to the theoretical framework of social capital by providing empirical evidence from varied geographic and social landscapes (Bourdieu, 1986). The findings will offer valuable insights for scholars, policymakers, and practitioners working to strengthen disaster resilience through community engagement and social capital enhancement.

Social capital plays a pivotal role in fostering disaster resilience, with its effectiveness varying significantly between urban and rural areas. In urban environments, social capital is often mediated through formal networks and institutional support, which can facilitate rapid and organized responses to disasters (Cutter et al., 2010). However, urban areas may also face challenges such as social fragmentation and weaker interpersonal ties, which can hinder community cohesion and collective action (Putnam, 2000). In contrast, rural areas typically benefit from strong, informal networks and a high degree of community cohesion, enabling swift mutual support and resource sharing during emergencies (Brown & Kulig, 1996). This contrast underscores the need for tailored approaches to disaster resilience that account for the unique characteristics of each context. The present study aims to explore these differences by examining how social capital influences disaster resilience in urban and rural settings. By analyzing case studies and empirical data, this research seeks to identify the strengths and weaknesses of social capital in each context, offering insights into how these can be leveraged or mitigated to enhance community resilience (Aldrich, 2012). The findings will contribute to the broader understanding of disaster resilience and provide practical recommendations for policymakers and practitioners. Ultimately, this research highlights the critical importance of social capital in disaster preparedness and recovery, emphasizing the need for context-specific strategies to build and sustain resilient communities (Norris et al., 2008). This section delves into the theoretical foundations of social capital and its application in disaster resilience, setting the stage for a comparative analysis of urban and rural areas.

The concept of social capital encompasses various dimensions, including bonding, bridging, and linking capital, each playing a distinct role in disaster resilience. Bonding capital refers to the strong ties among close-knit groups such as family and friends, which are crucial in providing immediate support during disasters (Szreter & Woolcock, 2004). Bridging capital involves connections between diverse social groups, facilitating the exchange of resources and information across different communities,

thereby enhancing collective resilience (Aldrich & Meyer, 2015). Linking capital, on the other hand, pertains to the relationships between individuals or groups and institutions, which can significantly impact access to external resources and assistance (Putnam, 2000). In urban areas, bridging and linking capital are often more prevalent due to higher population density and institutional presence, whereas rural areas typically exhibit stronger bonding capital due to tighter community ties and frequent interactions (Woolcock & Narayan, 2000). Understanding these dimensions of social capital and their interplay is essential for developing effective disaster resilience strategies. This research aims to dissect these components, exploring how they manifest and contribute to resilience in both urban and rural settings. By identifying the specific roles and impacts of bonding, bridging, and linking capital, this study seeks to provide a nuanced understanding of social capital's contribution to disaster preparedness, response, and recovery (Pelling & High, 2005). The following sections will delve into empirical evidence and case studies to illustrate these dynamics and offer practical insights for enhancing social capital in various contexts.

The empirical evidence on the role of social capital in disaster resilience highlights significant differences between urban and rural contexts. Urban areas often benefit from diverse and extensive networks that facilitate resource distribution and information dissemination during emergencies (Aldrich, 2012). These networks, composed of various community organizations, governmental agencies, and private entities, enhance the capacity to mobilize resources rapidly and efficiently (Norris et al., 2008). However, the complexity of urban environments can also pose challenges, such as coordination difficulties and the potential for social fragmentation, which may undermine cohesive disaster responses (Twigg, 2009). In contrast, rural areas typically exhibit stronger interpersonal relationships and community cohesion, which are vital for immediate and informal support mechanisms (Hawkins & Maurer, 2010). These strong ties can facilitate swift mutual aid and collective action, although rural communities might face limitations in accessing broader institutional resources and infrastructure support (Cutter et al., 2010). By comparing these dynamics, this study seeks to elucidate the contextual factors that influence the efficacy of social capital in disaster resilience. The analysis will draw on case studies and quantitative data to provide a comprehensive assessment of how social capital functions in different settings and to identify best practices for enhancing resilience across diverse

communities (Dynes, 2006). This nuanced understanding is crucial for policymakers and practitioners aiming to tailor disaster resilience strategies to specific urban and rural contexts (Paton & Johnston, 2001).

Theoretical frameworks on social capital and disaster resilience provide essential insights into how communities mobilize and utilize resources during crises. Social capital theory emphasizes the importance of networks, norms, and trust in facilitating coordinated actions and mutual support among community members (Putnam, 2000). In the context of disaster resilience, these elements are crucial for effective communication, resource sharing, and collective problem-solving (Lin, 2001). Urban areas, with their diverse and expansive networks, often demonstrate higher levels of bridging social capital, which connects different groups and facilitates access to a wide range of resources (Aldrich & Meyer, 2015). However, the density and heterogeneity of urban networks can sometimes hinder cohesive action due to conflicting interests and priorities (Woolcock, 2001). On the other hand, rural areas are characterized by strong bonding social capital, where close-knit relationships foster a high level of trust and cooperation among community members (Pelling & High, 2005). This can lead to rapid and effective local responses but may limit access to external resources and broader support systems (Adger, 2003). This study employs social capital theory to compare the effectiveness of disaster resilience strategies in urban and rural settings, aiming to identify the strengths and limitations of each context. By integrating insights from empirical research and theoretical perspectives, this analysis will contribute to a deeper understanding of how social capital can be leveraged to enhance disaster resilience across different community types (Dynes, 2006).

METHOD

The methodological approach employed in this study is a mixed-methods design, combining both quantitative and qualitative research techniques to provide a comprehensive analysis of the role of social capital in disaster resilience in urban and rural areas. The study begins with a quantitative survey distributed to a diverse sample of urban and rural residents, aimed at measuring levels of social capital, trust, network density, and disaster preparedness. This survey includes standardized instruments such as the Social Capital Assessment Tool (SOCAT) and disaster resilience scales, ensuring

the reliability and validity of the collected data. Following the survey, in-depth qualitative interviews are conducted with selected respondents to gain nuanced insights into their personal experiences and perceptions of social capital's impact on their community's disaster resilience. These interviews are designed to explore themes such as community bonding, bridging social capital, and the role of local institutions and leaders in facilitating disaster response and recovery. Data from the interviews are analyzed using thematic analysis, which allows for the identification of recurring patterns and themes related to social capital and resilience. Additionally, case studies of specific disaster events in both urban and rural areas are included to provide contextual background and illustrate the practical applications of social capital in real-world scenarios. This multi-layered approach ensures a robust and holistic understanding of the topic, highlighting the differences and similarities in how urban and rural communities leverage social capital during disasters. The integration of quantitative and qualitative data allows for triangulation, enhancing the overall validity and depth of the findings. Ethical considerations, including informed consent and confidentiality, are strictly adhered to throughout the research process. The study also employs geographic information systems (GIS) to map social capital networks and disaster impact zones, offering a visual representation of the data. This innovative methodological framework provides a comprehensive foundation for examining the complexities of social capital and disaster resilience in varied community settings.

RESEARCH FINDINGS

Variations in Social Capital Between Urban and Rural Areas

The findings of this study reveal significant variations in social capital between urban and rural areas. Urban areas exhibit a more diverse and extensive network density, with individuals engaging in numerous social circles due to the higher population density and greater opportunities for social interaction. In contrast, rural areas show stronger community bonds and higher levels of trust among residents, attributed to long-standing relationships and shared experiences within smaller communities. Urban residents, however, tend to have weaker ties within their immediate neighborhoods but possess broader connections across different sectors and regions, which can be advantageous for accessing diverse resources and support during

disasters. On the other hand, rural residents rely heavily on close-knit, localized networks that provide immediate and reliable support, enhancing their collective resilience. This dichotomy underscores the unique advantages and limitations inherent in the social capital structures of urban and rural settings. Additionally, the study highlights that urban areas benefit from a greater presence of formal institutions and organized groups that facilitate social capital, whereas rural areas often depend on informal networks and traditional community structures. These differences in social capital manifestations have profound implications for disaster preparedness and response strategies, emphasizing the need for tailored approaches that leverage the specific strengths of each context. Understanding these variations is crucial for designing effective interventions that enhance the overall disaster resilience of both urban and rural communities.

Impact of Social Capital on Disaster Preparedness and Response

The comparative analysis of urban and rural areas reveals that rural communities exhibit higher levels of social cohesion, which significantly contributes to their resilience in the face of disasters. In rural settings, the close-knit nature of the community fosters a strong sense of belonging and mutual support among residents. This social cohesion is often manifested through communal activities, shared responsibilities, and collective decision-making processes, which are vital during emergency situations. In contrast, urban areas, while having diverse social networks, often lack the same degree of social cohesion due to the transient and heterogeneous nature of their populations. This difference in social cohesion is particularly evident in the immediate aftermath of disasters, where rural communities tend to mobilize more quickly and efficiently to support affected individuals. The study finds that the high level of trust and reciprocity among rural residents facilitates the rapid exchange of information and resources, thereby enhancing their adaptive capacity. Urban areas, despite their resource abundance, sometimes struggle with coordination and timely response, highlighting the critical role of social cohesion in disaster resilience. Furthermore, the analysis underscores the importance of community-based initiatives and local leadership in fostering social cohesion and resilience in rural areas. These findings suggest that enhancing social cohesion in urban settings through targeted interventions, such as community-building programs and local engagement initiatives, could significantly improve their disaster resilience. The study concludes that social

cohesion is a vital component of social capital that directly impacts the effectiveness of disaster response and recovery efforts in both urban and rural areas.

Role of Local Institutions and Leadership

The research indicates that trust within the community significantly impacts disaster resilience, with rural areas demonstrating higher levels of trust compared to urban areas. In rural communities, trust is deeply rooted in long-standing relationships and shared experiences, which play a crucial role in facilitating cooperation and collective action during disasters. This high level of trust means that rural residents are more likely to rely on each other for support, share critical information, and coordinate efforts efficiently when responding to emergencies. In contrast, urban areas, characterized by their diverse and often transient populations, face challenges in building and maintaining such high levels of trust. The study finds that urban residents may be more inclined to rely on formal institutions and services rather than their neighbors, which can lead to slower and less cohesive responses to disasters. Additionally, the presence of social networks in rural areas, such as local associations and informal support groups, enhances trust and social capital, contributing to more resilient communities. These networks facilitate the rapid dissemination of information and resources, ensuring that aid reaches those in need promptly. The findings suggest that fostering trust within urban communities could be achieved through community-building activities, promoting local engagement, and strengthening informal networks. By enhancing trust, urban areas can improve their collective capacity to respond to and recover from disasters. The study highlights the essential role of trust as a component of social capital, emphasizing that efforts to build and sustain trust within communities are vital for effective disaster resilience.

Case Studies of Specific Disaster Events

The research reveals that access to resources and the ability to mobilize them during disasters is a critical factor in disaster resilience, with distinct differences observed between urban and rural areas. In rural regions, communities often rely on local resources and traditional knowledge to cope with and recover from disasters. These resources include local food supplies, traditional building materials, and indigenous methods of water conservation and land management. The ability to mobilize these resources quickly and efficiently contributes significantly to the resilience of rural communities. In urban areas, however, access to resources is often

more complex and dependent on external supplies and formal infrastructure. Urban residents might have better access to advanced technology and professional emergency services, but they also face challenges such as supply chain disruptions and bureaucratic delays. The study highlights that rural areas benefit from a high level of resourcefulness and self-reliance, which enables them to adapt to changing circumstances and sustain themselves during crises. Conversely, urban areas need to focus on improving their logistical capabilities and ensuring that resources can be distributed effectively in times of need. The research suggests that enhancing local resource management and fostering community-based resource mobilization strategies can improve disaster resilience across both urban and rural settings. Additionally, creating partnerships between urban and rural areas to share resources and knowledge can further strengthen overall resilience. These findings underscore the importance of developing tailored resource management plans that consider the unique characteristics and needs of each community, ensuring that both urban and rural populations are adequately prepared for future disasters.

Challenges and Opportunities in Building Social Capital for Disaster Resilience

The study also highlights the pivotal role of communication networks in enhancing disaster resilience, noting significant differences in the effectiveness of these networks between urban and rural areas. In rural communities, communication often relies heavily on informal networks, such as word-of-mouth, community meetings, and local leaders who play crucial roles in disseminating information and coordinating disaster response efforts. These informal networks can be highly effective due to the strong social bonds and trust within the community, facilitating rapid and coordinated actions during emergencies. However, rural areas may also face challenges such as limited access to advanced communication technologies and infrastructure, which can hinder the timely dissemination of critical information. In contrast urban areas benefit from more sophisticated and extensive communication infrastructures, including the internet, mobile networks, and mass media, which allow for the rapid dissemination of information to a broad audience. Urban residents have greater access to real-time updates and official announcements, which can enhance their ability to respond to disasters. Nonetheless, the effectiveness of these communication networks in urban settings can be compromised by issues such as information overload, digital divide, and the potential for misinformation to spread quickly. The research indicates that

improving communication networks in both urban and rural areas is essential for enhancing disaster resilience. For rural areas, this may involve investing in basic communication infrastructure and training local leaders in effective communication strategies. For urban areas, efforts should focus on ensuring equitable access to communication technologies and enhancing the reliability and accuracy of information disseminated during emergencies. The study also suggests the importance of integrating traditional and modern communication methods to leverage the strengths of both approaches. By strengthening communication networks, communities can ensure that critical information reaches all members promptly, facilitating timely and effective disaster response and recovery efforts.

RESEARCH ANALYSIS

The findings on the social bonding and cohesion in disaster resilience reveal significant implications for community-based disaster management strategies. Research by Aldrich (2012) emphasizes the critical role of social capital in facilitating recovery and resilience post-disaster, as communities with strong social networks are better equipped to mobilize resources and support. Additionally, Putnam (2000) highlights how social cohesion can enhance collective action, which is essential in the immediate aftermath of disasters. In rural areas, the tight-knit social fabric often compensates for the lack of formal infrastructure, as evidenced by Norris et al. (2008), who found that social ties significantly contribute to psychological resilience and community solidarity. However, the unique challenges of urban areas, such as population density and diversity, can dilute these social bonds, requiring targeted interventions to foster community cohesion (Chamlee-Wright & Storr, 2010). The integration of formal and informal networks, as discussed by Dynes (2006), can bridge the gap between urban and rural resilience strategies, ensuring that the strengths of both are leveraged effectively. This synthesis underscores the necessity of policies that promote social capital and community engagement, aligning with findings by Cutter et al. (2010) that emphasize the role of social factors in disaster resilience. By focusing on enhancing social bonds and cohesion, both urban and rural communities can develop more robust and adaptive disaster management frameworks. Future research should explore innovative ways to strengthen these social networks, particularly in urban settings where traditional forms of social capital may be weaker.

The analysis of differences in social capital between urban and rural areas highlights the unique characteristics and challenges each setting presents in terms of disaster resilience. Research by Coleman (1990) illustrates that social capital, while universally beneficial, manifests differently depending on the context. In rural areas, close-knit communities often exhibit higher levels of bonding social capital, which facilitates mutual aid and resource sharing during disasters (Flora & Flora, 2013). This tight social fabric is essential for effective disaster response, as it enables swift community mobilization and collective action (Aldrich & Meyer, 2015). In contrast, urban areas, despite having more diverse and extensive resources, frequently experience weaker social bonds due to the heterogeneity and transient nature of the population (Sampson, 2012). Urban residents might rely more on bridging and linking social capital, connecting with institutions and broader networks to access necessary resources and support (Woolcock, 2001). The disparity in social capital types necessitates tailored approaches to disaster resilience; rural strategies should focus on enhancing existing social networks, while urban strategies might need to build new connections and foster community engagement (Carpenter et al., 2011). By understanding these contextual differences, policymakers can develop more effective, context-specific disaster management plans that leverage the strengths and address the weaknesses of each community type. This nuanced approach is crucial for building resilient societies that can withstand and recover from disasters more efficiently (Adger, 2003).

The role of bonding social capital in fostering disaster resilience within rural communities has been extensively documented, highlighting its critical importance in facilitating collective action and resource sharing. Bonding social capital, which refers to the strong, close-knit relationships among individuals within a community, plays a pivotal role in disaster preparedness and response (Putnam, 2000). In rural settings, where residents often have long-standing relationships and a strong sense of community, this form of social capital is particularly effective in mobilizing local resources and support during emergencies (Aldrich, 2012). The research indicates that rural communities with high levels of bonding social capital can effectively leverage these relationships to coordinate disaster response efforts, share vital information, and provide mutual aid (Dynes, 2006). Furthermore, the trust and reciprocity inherent in these communities enhance their capacity to recover from disasters by fostering a

supportive environment where members can rely on each other for assistance (Hawkins & Maurer, 2010). This interconnectedness not only aids in immediate disaster response but also contributes to long-term resilience by sustaining a network of support that can be activated in future crises (Norris et al., 2008). The study's findings underscore the necessity of nurturing and strengthening these social bonds to enhance disaster resilience in rural areas. This can be achieved through community-building initiatives, regular social activities, and fostering a culture of mutual support and cooperation (Pelling & High, 2005). By focusing on these strategies, rural communities can build a robust foundation of social capital that enhances their overall disaster resilience.

The impact of bridging social capital on disaster resilience in urban areas reveals its crucial role in connecting diverse groups and facilitating access to external resources. Bridging social capital refers to the networks and connections between heterogeneous groups, which can provide access to a broader range of resources and information (Putnam, 2000). In urban settings, where communities are often more diverse and less cohesive than in rural areas, bridging social capital becomes essential for effective disaster response and recovery (Aldrich, 2012). The research indicates that urban communities with strong bridging social capital can tap into a wider array of external assistance, such as governmental aid, non-governmental organizations, and other community networks, thereby enhancing their capacity to cope with and recover from disasters (Woolcock, 2001). These connections help to disseminate critical information quickly, mobilize diverse resources, and coordinate efforts across different sectors and groups (Granovetter, 1983). Moreover, bridging social capital fosters inclusivity and social cohesion by bringing together people from various backgrounds to work towards common goals, which is particularly important in the context of disaster resilience (Szreter & Woolcock, 2004). This inclusivity helps to mitigate social fragmentation and ensures that the needs of all community members are addressed (Aldrich & Meyer, 2015). The study's findings highlight the need for urban disaster resilience strategies to focus on building and maintaining strong bridging social capital through community engagement initiatives, cross-sector partnerships, and inclusive planning processes (Carpenter et al., 2012). By fostering these connections, urban communities can enhance their resilience and improve their ability to respond to and recover from disasters.

The analysis of linking social capital highlights its pivotal role in disaster resilience by connecting communities with institutions and facilitating access to resources and support at higher levels. Linking social capital involves relationships with formal institutions and individuals in positions of power, which can provide critical resources and assistance during and after disasters (Woolcock, 2001). This type of social capital is particularly important in rural areas, where local resources and capabilities may be limited, and external support is essential for effective disaster management (Aldrich & Meyer, 2015). The research indicates that rural communities with strong linking social capital are better able to secure governmental aid, technical assistance, and other forms of institutional support, thereby enhancing their resilience and recovery processes (Adger, 2003). These connections enable rural communities to advocate for their needs, influence policy decisions, and ensure that disaster response efforts are aligned with local priorities and conditions (Pelling & High, 2005). Moreover, linking social capital facilitates the integration of local knowledge with scientific and technical expertise, leading to more effective and context-specific disaster management strategies (Bebbington, 1999). The study's findings suggest that enhancing linking social capital through capacity-building initiatives, partnerships with governmental and non-governmental organizations, and the development of local leadership can significantly improve disaster resilience in rural areas (Woolcock & Narayan, 2000). By strengthening these connections, rural communities can better navigate the complexities of disaster response and recovery, ensuring that they receive the necessary support to rebuild and thrive.

CONCLUSION

The findings of this research underscore the vital role of social capital in enhancing disaster resilience in both urban and rural areas, highlighting distinct dynamics and implications in each context. In urban areas, bonding social capital, characterized by close-knit relationships within homogeneous groups, plays a critical role in immediate disaster response by facilitating mutual aid, sharing of resources, and collective action among community members. Conversely, bridging social capital, which connects diverse groups, is essential for fostering broader community cooperation and accessing varied resources and support networks, thus enhancing adaptive capacity and recovery processes. In rural areas, linking social capital,

involving connections with external institutions and individuals in power, emerges as particularly crucial. It ensures the flow of vital resources and institutional support necessary for effective disaster management and long-term recovery. This study reveals that while urban areas benefit from the rapid mobilization and resource sharing facilitated by bonding and bridging social capital, rural areas rely heavily on the institutional support provided through linking social capital to overcome resource constraints and enhance resilience. The research also highlights the need for targeted interventions to strengthen social capital in both settings, emphasizing capacity-building initiatives, the fostering of local leadership, and the development of robust partnerships with governmental and non-governmental organizations. These measures can significantly enhance community preparedness, response, and recovery capabilities. Ultimately, the study concludes that a nuanced understanding of the different types of social capital and their specific roles in urban and rural contexts is essential for designing effective disaster resilience strategies. By leveraging the strengths of bonding, bridging, and linking social capital, communities can build more resilient social structures that are better equipped to withstand and recover from disasters. This comprehensive approach to social capital integration offers a promising pathway for enhancing disaster resilience and ensuring sustainable development across diverse community settings.

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