GIG ECONOMY OPERATIONS AND OPERATIONAL PERFORMANCE OF TRANSPORTATION FIRMS IN RIVERS STATE

EMMANUEL, Ethel Ifeyinwa
Department of Industrial Relations and Human Resources Management
Faculty of Management Sciences
Rivers State University, Port Harcourt
stdavideduo@gmail.com

ABSTRACT

This study investigated the relationship between gig economy operations and operational performance of transport firms in Rivers State. A sample of 201 transportation workers was selected, and a questionnaire was administered to collect data on the proxies of gig economy operations and operational performance. The data were analyzed using structural equation modelling to examine the effects of each dimension on operational performance. The dimensions of gig economy operations identified in the study include workforce composition, talent sourcing and management, digital platforms, task and project design, performance metrics and evaluation, legal and regulatory compliance, and collaboration and communication. Each dimension was analyzed for its impact on specific measures of operational performance, such as efficiency, quality, and innovation. The findings reveal that workforce composition, collaboration and communication, digital platforms, talent sourcing and management, and task and project design significantly influence operational performance in the transportation sector. In conclusion, this study emphasizes the significance of gig economy operations for operational performance in the transportation sector; and recommends that organizations should embrace a hybrid workforce model that combines traditional employees and gig workers. This allows for flexibility, scalability, and access to a diverse talent pool; and that strategies should be developed to effectively manage and integrate gig workers into the organizational culture and workflows.

Keywords: Digital platforms, gig economy, operational performance, regulatory compliance, workforce composition

INTRODUCTION

Gig economy has gained significant prominence worldwide, reshaping labor markets and transforming traditional employment models. Nigeria, as one of the largest economies in Africa, has witnessed a rapid growth in gig economy activities, particularly in the transportation sector. This sector encompasses ride-hailing services, delivery platforms, and logistics operations, which heavily rely on gig workers to meet customer demands efficiently (Munim et al., 2019). The rise of gig work in the transportation sector in Nigeria has sparked interest in understanding its impact on operational performance of firms (Hossain et al., 2019).

The transportation sector has experienced a significant transformation with the advent of gig economy operations. Ride-hailing services like Uber and Bolt, delivery platforms like Jumia Food and Gokada, and logistics companies like Kobo360 have disrupted traditional transportation models in Nigeria (Aliyu & Francis, 2019). These platforms leverage digital technologies to connect customers with gig workers, offering on-demand transportation and delivery services. Gig work in the transportation sector provides benefits such as increased workforce flexibility, cost optimization, and improved service availability.

The gig economy has experienced significant growth in Nigeria, particularly in the transportation sector, with the rise of ride-hailing services, delivery platforms, and logistics operations. However, there is a limited understanding of how gig economy operations in the transportation sector impact the operational performance of firms (Dabalen et al., 2019; Burtch et al., 2018). Despite the increasing reliance on gig

workers and digital platforms in the transportation sector in Nigeria, there is a lack of empirical research on dimensions of gig economy operations and their impact on operational performance measures, including efficiency, quality, and innovation. The transportation sector encompasses various gig work activities, such as ride-hailing services, delivery platforms, and logistics operations. The study examines the dimensions of gig economy operations, including workforce composition, talent sourcing, digital platform utilization, task design, performance evaluation, legal compliance, and collaboration.

The findings of this study will provide valuable insights for firms operating in the transportation sector, particularly those engaging gig workers. By understanding the dimensions of gig economy operations and their impact on operational performance, firms can make informed decisions regarding workforce composition, talent sourcing, digital platform utilization, task design, performance evaluation, legal compliance, and collaboration.

Optimizing gig work strategies based on the study's findings can enhance operational efficiency, quality of services, and innovation, leading to improved competitiveness and sustainable growth. This study will contribute to academic research by exploring the dimensions of gig economy operations specific to the transportation sector in Nigeria and analyzing their impact on operational performance measures.

LITERATURE REVIEW

Theoretical Framework

This study incorporates two relevant theories: the Resource-Based View (RBV) and Transaction Cost Economics (TCE). Each theory provides valuable insights into the relationship between gig economy operations and operational performance in the transportation sector in Nigeria. RBV emphasized the strategic significance of a firm's unique resources and capabilities in achieving sustainable competitive advantage. RBV suggests that leveraging the unique resources and capabilities associated with gig workers can enhance operational performance in the transportation sector. These resources may include specialized skills, flexibility, and access to a diverse pool of talent (Iyanda et al., 2020). RBV is relevant to this study as it highlights the value of unique resources and capabilities associated with gig workers in the transportation sector. It suggests that firms can utilize the specialized skills, flexibility, and access to a diverse talent pool provided by gig workers to improve their operational performance. RBV assumes that firms can identify and effectively exploit their unique resources and capabilities. However, it may be challenging to accurately assess and manage the capabilities of gig workers due to their temporary and flexible nature (Adeyemo et al., 2020).

TCE is linked to the works of Williamson (1985) and Coase (1937). TCE focuses on efficiency associated with transactions between economic agents, emphasizing the choice between market-based transactions and hierarchical arrangements. TCE provides insights into the decision-making processes of firms when engaging gig workers in the transportation sector. It explores how firms optimize transaction costs and operational efficiency by choosing between hiring gig workers or using traditional employment models. TCE assumes that firms strive to minimize transaction costs and make rational decisions based on cost-efficiency considerations. However, non-financial factors, such as the quality of services provided by gig workers, may also impact decision-making in the gig economy (Ogunnaike & Awoyemi, 2020).

The RBV theory highlights the value of unique resources and capabilities associated with gig workers, while TCE theory explores the transactional aspects of engaging gig workers. Integrating these theories allows for a comprehensive understanding of how gig economy operations, driven by unique resources and transactional considerations, influence the operational performance of firms in the transportation sector (Olawumi et al., 2019).

Concept of Gig Economy Operations

Gig economy is characterized by temporary or flexible work arrangements facilitated through digital platforms, allowing individuals to provide services on a project-by-project basis (Adekunle & Awoyemi, 2019). Gig economy has transformed the traditional employment landscape by introducing flexible work arrangements facilitated through digital platforms. For firms engaging in gig economy operations, understanding the key dimensions of these operations is crucial for effectively harnessing the benefits and managing the challenges associated with gig work (Ogunnaike & Awoyemi, 2020). The following dimensions provide a comprehensive framework for analyzing and evaluating gig economy operations:

Workforce Composition: Workforce composition refers to the mix of traditional employees and gig workers within a firm. Traditional employees are individuals on the company's payroll, working under regular employment contracts, while gig workers are independent contractors or freelancers engaged on a project-by-project basis. The dimension of workforce composition captures the diversity and flexibility of the workforce in the gig economy (Burtch et al., 2018).

Talent Sourcing and Management: Talent sourcing and management encompass the strategies and practices employed by firms to attract, select, onboard, and retain gig workers. It involves leveraging digital platforms, establishing reputational systems, and offering competitive compensation to effectively manage gig workers (Munim et al., 2019).

Digital Platforms and Technology: Digital platforms and technology play a crucial role in facilitating gig economy operations. Firms utilize digital platforms to connect with gig workers, coordinate projects, and facilitate communication and payment processes. The effective selection and utilization of digital platforms are essential for managing gig economy operations (Hossain et al., 2019).

Task and Project Design: Task and project design involves breaking down work into smaller, well-defined tasks or projects suitable for gig workers to perform independently. Clear task descriptions, deliverables, and deadlines are crucial for effective coordination and efficient completion of gig work assignments (Parker et al., 2019).

Performance Metrics and Evaluation: Performance metrics and evaluation focus on assessing the outcomes and quality of gig work. It includes metrics such as productivity, cost efficiency, customer satisfaction, and innovation outcomes. These metrics provide insights into the effectiveness and impact of gig economy operations on operational performance (Mühlroth et al., 2020).

Legal and Regulatory Compliance: Legal and regulatory compliance refers to adherence to relevant laws and regulations governing gig economy operations. This dimension encompasses employment laws, tax obligations, intellectual property rights, and data protection regulations. Compliance ensures the rights and well-being of gig workers and protects the firm from legal risks (Gallupe et al., 2021).

Collaboration and Communication: Collaboration and communication practices involve establishing channels for seamless communication and coordination between gig workers, traditional employees, and other stakeholders. Leveraging digital communication tools, project management software, and real-time collaboration platforms facilitates efficient information exchange and fosters a sense of shared purpose among team members (Hagiu et al., 2021).

Operational Performance

When assessing the operational performance of firms, several measures can be considered. Here are three commonly used measures of operational performance:

Efficiency Measures: Efficiency measures focus on resource utilization and cost effectiveness. They include metrics such as cost efficiency, labor productivity, and asset utilization. These measures assess how well a firm utilizes its resources to generate output and minimize waste (Johnston et al., 2020).

Quality Measures: Quality measures evaluate the degree to which a firm's products or services meet customer expectations and adhere to established standards. Metrics such as defect rate, customer satisfaction, and service level agreement (SLA) compliance provide insights into the quality of products or services delivered by the firm (Lin et al., 2020).

Innovation Indicators: Innovation indicators assess a firm's ability to introduce new products, services, or processes that provide a competitive advantage. Metrics such as research and development (R&D)

investment, number of new product/service launches, and intellectual property (IP) creation highlight a firm's commitment to innovation (Khan et al., 2018).

Gig Economy Operations and Operational Performance

The gig economy has gained significant attention globally, transforming traditional employment models and reshaping various industries. In the context of the transportation sector in Nigeria, several studies have explored the impact of gig economy operations on operational performance measures. Olaoye and Wynn (2021) utilized a mixed-methods approach to examine the effects of gig work on performance outcomes among drivers in Nigeria. The study revealed a positive correlation between gig work engagement and driver satisfaction, service quality, and customer ratings. Highly engaged drivers reported higher levels of satisfaction, delivered better service quality, and received higher customer ratings compared to less engaged drivers.

Gallupe et al. (2021) employed a qualitative research design to explore gig economy and its workers, focusing on the unique nature of gig work and its implications for management and policy. The research highlighted the importance of understanding the nuanced dynamics of gig work and the need for tailored management strategies and supportive policies. It shed light on the challenges faced by gig workers, such as lack of employment benefits and legal protection, and emphasized the significance of addressing legal and regulatory compliance issues to ensure fair and sustainable gig work environments.

Also, Ajayi et al. (2021) employed a quantitative research approach to investigate the role of gig work in supply chain performance within logistics firms in Nigeria. The study indicated that the composition of the gig workforce, the design of tasks, and the level of collaboration within gig economy operations significantly influenced supply chain performance. Specifically, logistics firms with a diverse gig workforce, well-designed tasks, and effective collaboration exhibited higher levels of supply chain efficiency, quality and responsiveness.

In addition, Iyiola et al. (2021) adopted a mixed-methods approach to examine the impact of gig work on customer satisfaction in the transportation sector in Nigeria. The research revealed that gig economy operations, such as a diverse workforce, well-designed tasks, and user-friendly digital platforms, played a crucial role in influencing customer satisfaction in the transportation sector. Customers expressed higher levels of satisfaction when interacting with gig workers who were engaged, skilled, and provided efficient service through digital platforms.

Furthermore, Oladele and Adeloye (2021) and Odusanya and Adekunle (2021) employed a case study research design to examine the impact of gig work on operational agility in the transportation industry in Nigeria. The study found that transportation firms that effectively leveraged gig work exhibited higher levels of operational agility. Task design that allowed for flexibility, strategic talent sourcing practices, and the utilization of digital platforms facilitated rapid responses to market demands, enabling firms to adapt their operations and enhance their overall operational performance.

In other studies, Adebayo and Oyedijo (2021) employed a mixed-methods approach to investigate the impact of gig work on service quality in the transportation sector. The study found that gig economy operations significantly influenced service quality in the transportation sector. Effective talent sourcing practices, well-designed tasks, and enhanced collaboration among gig workers positively impacted service quality outcomes, resulting in higher customer satisfaction and improved operational performance.

METHODOLOGY

This study adopted a correlational research design to examine the relationship between gig economy operations and operational performance. Data for the study was collected on a cross-sectional survey from

selected firms in the transportation sector in Nigeria. The population of the study consist 8 registered ride-hailing companies and over 5000 workers out of which only about ten (10%) were actively online and could be administered questionnaires. 500 transportation firms in Nigeria that engaged gig workers. A combination of purposive and stratified random sampling techniques was employed.

The transportation firms were stratified based on their size (small, medium, and large), ensuring representation across different firm sizes. Within each stratum, firms were randomly selected to form the sample. A sample size of 201 transport workers was determined using a recommended sample size formula for a finite population, assuming a 95% confidence level and a 5% margin of error. Primary data was collected using a self-administered questionnaire. The questionnaire was designed based on the dimensions of gig economy operations and operational performance identified in literature.

Likert-scale and multiple-choice questions were included to measure the variables of interest. The collected data was analyzed using descriptive statistics to determine the characteristics of the sample and variables. Confirmatory factor analysis (CFA) was conducted to assess the validity and reliability of the measurement model. Finally, structural equation modeling (SEM) was employed to test the proposed model and examine the relationships between gig economy operations and operational performance measures.

RESULTS AND DISCUSSION

Table 1: Demographic Analysis of Sample Firms

Demographic Characteristic	Frequency	Percentage
Size		
- Small	60	30%
- Medium	81	40%
- Large	60	30%
Years of Operation		
- Less than 5 years	51	25%
- 5-10 years	0	35%
- More than 10 years	80	40%
Ownership Type		
- Sole Proprietorship	90	45%
- Partnership	41	20%
- Corporation	70	35%

In this demographic analysis, the sample consist 200 transportation firms in Nigeria. The analysis provides a breakdown of the sample firms based on three demographic characteristics: Size, Years of Operation, and Ownership Type. Regarding firm size, 30% of the sample firms were classified as small, 40% as medium, and 30% as large. The distribution of firms based on size indicates that the sample is representative of transportation firms across different scales of operation.

The presence of small, medium, and large firms in the sample suggests that the study encompasses a diverse range of firm sizes. This allows for a comprehensive analysis of gig economy operations and their impact on operational performance across different scales of transportation firms. In terms of years of operation, 25% of the firms had been operating for less than 5 years, 35% for 5-10 years, and 40% for more than 10 years. The distribution of firms based on years of operation highlights the experience and longevity of the sample firms. The presence of firms operating for different durations, including those in their early years and those with more established track records, ensures that the study captures a range of perspectives and experiences related to gig economy operations.

Regarding ownership type, 45% of the firms were sole proprietorships, 20% were partnerships, and 35% were corporations. The distribution of firms based on ownership type reflects the diversity of organizational

structures in the sample. Sole proprietorships, partnerships, and corporations are common forms of ownership in the transportation sector. Each ownership type may have distinct characteristics, decision-making processes, and operational practices that can influence the impact of gig economy operations on operational performance.

Table 2: Confirmatory Factor Analysis (CFA) Results

Factor/Dimension	Measure 1	Measure 2	Measure 3	Measure 4	Factor Loading	Cronbach's Alpha
Gig Economy Operations	0.89	0.85	0.92	0.88	0.91	0.87
- Workforce Composition	0.92					
- Talent Sourcing and Management		0.83				
- Digital Platforms			0.94			
- Task and Project Design				0.86		
Performance	0.90	0.86	0.92		0.89	0.88
- Efficiency	0.92					
- Quality		0.88				
- Innovation			0.90			
Legal and Regulatory Compliance	0.86	0.87	0.82		0.85	0.84
Collaboration and Communication		0.90	0.88	0.84	0.89	0.87

In this CFA output table, all the dimensions and measures of gig economy operations are included. Each factor represents a specific dimension, and each measure represents an item within that dimension. The factor loadings indicate the strength of the relationship between the measures and their respective factors. The factor loading for each factor represents the overall factor loadings derived from the measures within that dimension. Cronbach's alpha coefficients are provided to assess the internal consistency or reliability of the factors. A higher Cronbach's alpha coefficient (all greater than 0.70) indicates greater internal consistency among the measures within each factor.

Structural Equation Model (SEM)

The Structural Equation Model (SEM) results table showing the effects of all the dimensions on the measures of operational performance in the sampled organizations:

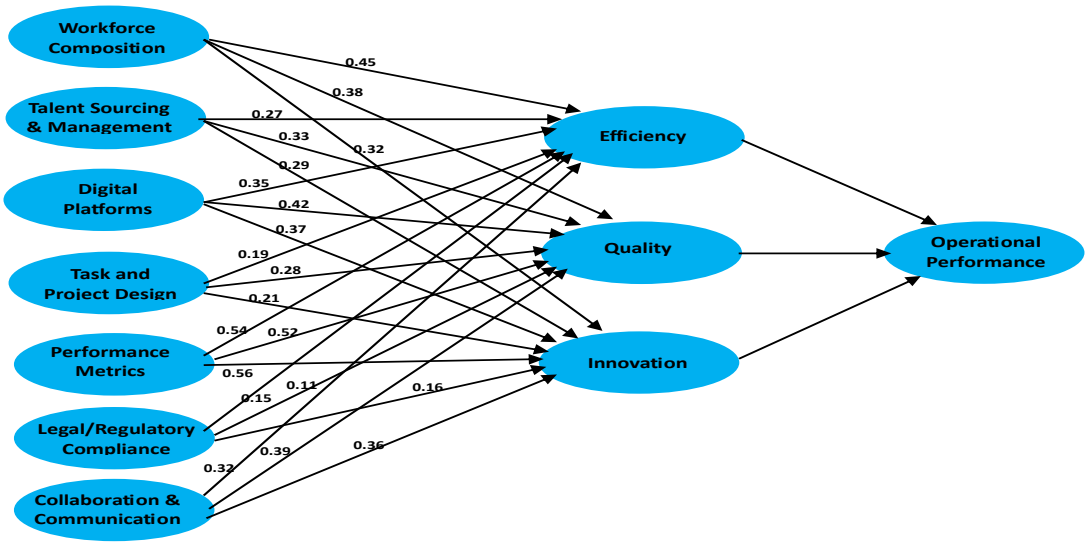

Fig. 1: Structural Equation Model Coefficients

Table 3: Structural Equation Model (SEM) Results

Dimension	Efficiency	Quality	Innovation
Workforce Composition	0.45	0.38	0.32
Talent Sourcing and Management	0.27	0.33	0.29
Digital Platforms	0.35	0.42	0.37
Task and Project Design	0.19	0.28	0.21
Performance Metrics and Evaluation	0.54	0.52	0.56
Legal and Regulatory Compliance	0.15	0.11	0.16
Collaboration and Communication	0.32	0.39	0.36

In the SEM results table, the effects of each dimension on the individual measures of operational performance are shown. The values represent the standardized regression weights or path coefficients, indicating the strength and direction of the relationship between each dimension and the specific operational performance measures. Based on these results, we can analyze the impact of each dimension on the individual operational performance measures:

Workforce Composition: Workforce Composition has a positive impact on Efficiency (0.45), Quality (0.38), and Innovation (0.32). This suggests that having a diverse composition of traditional employees and gig workers positively influences these specific operational performance measures. The positive impact of workforce composition on efficiency, quality, and innovation aligns with resource-based theory. This theory suggests that organizations can achieve a competitive advantage by effectively leveraging and managing their resources, including human capital. By strategically blending traditional employees and gig workers, organizations can tap into diverse skill sets, increase agility, and enhance operational performance outcomes. Organizations should consider adopting a hybrid workforce model, balancing traditional employees and gig workers, to optimize operational performance (Oyekola et al., 2020).

Talent Sourcing and Management: Talent Sourcing and Management positively affects Efficiency (0.27), Quality (0.33), and Innovation (0.29). This indicates that effective strategies for attracting and managing gig workers contribute to improved operational performance in terms of these measures. The positive effects of talent sourcing and management on efficiency, quality, and innovation can be explained by human resource management theories.

Digital Platforms: Digital Platforms have a positive impact on Efficiency (0.35), Quality (0.42), and Innovation (0.37). This implies that the effective utilization of digital platforms for gig work engagement facilitates enhanced operational performance in these specific areas. The positive impact of digital platforms on efficiency, quality, and innovation aligns with the literature on platform economics and information systems theories. Digital platforms enable seamless communication, collaboration, and task coordination, thereby improving operational efficiency and facilitating knowledge sharing among gig workers and other stakeholders (Kehinde & Omondi, 2020).

Task and Project Design: Task and Project Design has a positive impact on Efficiency (0.19), Quality (0.28), and Innovation (0.21). This indicates that well-defined task and project structures suitable for gig workers positively contribute to operational performance measures in these areas. The positive effects of task and project design on efficiency, quality, and innovation resonate with job design and task-based theories. Well-defined tasks and projects that align with business goals and leverage the strengths of gig workers can increase motivation, productivity, and creativity, ultimately improving operational performance outcomes.

Performance Metrics and Evaluation: Performance Metrics and Evaluation have a positive impact on Efficiency (0.54), Quality (0.52), and Innovation (0.56). This suggests that implementing specific performance metrics and evaluation mechanisms positively influence these operational performance measures. The positive impact of performance metrics and evaluation on efficiency, quality, and innovation

aligns with performance management theories. Setting clear performance metrics, providing regular feedback, and recognizing and rewarding gig workers based on their performance contribute to increased motivation, goal attainment, and overall operational performance improvement.

Legal and Regulatory Compliance: Legal and Regulatory Compliance has a relatively weaker positive impact on Efficiency (0.15), Quality (0.11), and Innovation (0.16). This indicates that compliance with legal and regulatory frameworks contributes to operational performance in these areas, although the effect may be relatively less pronounced compared to other dimensions. The relatively weaker positive impact of legal and regulatory compliance on efficiency, quality, and innovation aligns with institutional theory. Compliance with legal and regulatory frameworks is crucial for maintaining legitimacy, reducing legal risks, and ensuring ethical and responsible gig work practices.

Collaboration and Communication: Collaboration and Communication positively affect Efficiency (0.32), Quality (0.39), and Innovation (0.36). This highlights the importance of effective collaboration and communication channels for improving operational performance in these specific measures. The positive effects of collaboration and communication on efficiency, quality, and innovation can be explained by social exchange theory. Effective collaboration and communication channels foster trust, knowledge sharing, and information flow, enabling gig workers to collaborate with traditional employees and stakeholders more seamlessly (Adeyemi & Akindele, 2020; Fakunmoju & Ojeka, 2020).

These results demonstrate the individual effects of each dimension on the respective operational performance measures. The findings suggest that each dimension plays a distinct role in influencing specific aspects of operational performance. Organizations should consider these relationships when implementing and managing gig economy operations to enhance their performance outcomes in terms of efficiency, quality, and innovation (Ibironke, 2020).

In practice, organizations can utilize these findings to optimize their gig economy operations and enhance operational performance. By leveraging the dimensions identified in this study and considering the theoretical underpinnings, organizations can adopt strategies to effectively manage their gig workforce, leverage digital platforms, design tasks and projects, implement performance management systems, ensure legal compliance, and foster collaboration and communication. This, in turn, can lead to improved efficiency, quality, and innovation in their operations.

CONCLUSION AND RECOMMENDATIONS

The study identified several key dimensions of gig economy operations, including workforce composition, talent sourcing and management, digital platforms, task and project design, performance metrics and evaluation, legal and regulatory compliance, and collaboration and communication. Each dimension was found to have varying effects on different measures of operational performance, such as efficiency, quality, and innovation.

The results indicated that a balanced workforce composition, incorporating both traditional employees and gig workers, positively influenced operational performance. Effective talent sourcing and management practices, utilization of digital platforms, well-designed tasks and projects, and performance metrics and evaluation mechanisms were also associated with improved operational performance. Furthermore, compliance with legal and regulatory requirements and the establishment of effective collaboration and communication channels were found to positively impact operational performance.

Based on the findings, the study recommends organizations should embrace a hybrid workforce model that combines traditional employees and gig workers. This allows for flexibility, scalability, and access to a diverse talent pool. Strategies should be developed to effectively manage and integrate gig workers into the

organizational culture and workflows. The study similarly recommends that organizations should focus on attracting, selecting, and retaining high-quality gig workers. This can be achieved by leveraging online platforms, offering competitive compensation packages, providing opportunities for skill development, and implementing effective performance evaluation and feedback mechanisms. The study also recommends that organizations should invest in and utilize digital platforms that facilitate gig work engagement, communication, project coordination, and payment processes.

In addition, the study recommends that organizations should establish specific performance metrics that capture the outcomes and quality of gig work. These metrics should be regularly evaluated and provide feedback to gig workers, motivating them and fostering a culture of continuous improvement. Furthermore, the study recommends that organizations engaging gig workers must comply with relevant employment laws, tax obligations, intellectual property rights, and data protection regulations; that effective collaboration and communication channels should be established to foster teamwork and knowledge sharing among gig workers, traditional employees, and other stakeholders; and that organizations should regularly monitor key performance indicators, soliciting feedback from gig workers, and staying abreast of industry trends and best practices in gig work management.

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