Unlocking Decision-Making Performance through Data Governance and Availability: Structural and Predictive Evidence from Jordan

Nasim Matar
Department of Software Engineering
Alzaytoonah University, Jordan
Nasim.matar@zuj.edu.jo

Amneh Aljaber
Department of Business Administration
Applied Science University, Jordan
A_Aljaber@asu.edu.jo

Wasef Mater
Department of E-Commerce
University of Petra, Jordan
Wasef.Mater@uop.edu.jo

Abstract: *In the context of increasingly data-driven organizational environments, effective Decision-Making (DM) relies substantially on sound data management practices. This study investigates the interconnections among Data Governance (DG), Data Availability (DA), and DM in Jordanian organizations. Utilizing Structural Equation Modeling (SEM) and regression analysis, both direct and mediating relationships were examined. A cross-sectional survey design was employed, and data were analyzed using Confirmatory Factor Analysis (CFA), SEM, and mediation testing, followed by regression analysis to assess additional determinants of decision Speed (SPD1) and accuracy. Findings indicate that DA significantly mediates the relationship between DG and DM, with robust model fit indices and notable explained variance (R^2). Furthermore, data Accessibility (ACC1) emerged as a critical predictor of decision SPD1. These results contribute to the theoretical discourse by reinforcing Resource-Based Theory (RBT) perspectives on data as a strategic resource and provide empirical evidence within a developing-country context. Implications are offered for both policy development and managerial practices in Jordanian organizations.*

Keywords: *Decision-making, resource-based theory, structural equation modelling, multiple regression.*

Received August 24, 2025; accepted December 18, 2025
https://doi.org/10.34028/iajit/23/3/2

1. Introduction

The global rise of data-driven Decision-Making (DM) has transformed how organizations plan, operate, and compete. Across industries, leaders increasingly rely on timely, accurate, and integrated data to inform strategic choices, streamline operations, and gain a competitive edge. However, while the importance of high-quality data is well established, the mechanisms through which Data Governance (DG) translates into tangible DM effectiveness remain less understood particularly in developing-country contexts [1]. In many developing economies, the adoption of modern data management frameworks is uneven, and the institutional, infrastructural, and cultural conditions that enable effective data use are still evolving. Within this environment, the link between DG and decision outcomes is not always direct [5]. DG may establish rules and standards, but without ensuring Data Availability (DA) the extent to which information is accessible, complete, and timely the potential of governance to improve decisions remains unrealized [17]. Jordanian organizations provide a valuable context for studying these dynamics. Many have embarked on digital transformation initiatives, yet still face challenges such as siloed data repositories, inconsistent governance practices, and limited investment in infrastructure to support real-time access [31]. These constraints make it essential to investigate not only whether governance affects DM, but also the role of availability as a bridging mechanism. This study argues that integrating Structural Equation Modeling (SEM) with regression analysis offers deeper insights than using either approach alone. SEM allows for simultaneous testing of measurement validity and structural relationships, including mediation effects, while regression provides complementary detail on predictive strength and practical impact. Accordingly, the objectives of this research are to:

1) Empirically assess the relationships between DG, DA, and DM in Jordanian organizations.
2) Test the mediating role of DA in the DG-DM relationship using SEM.
3) Complement these findings with regression analysis to better understand predictive contributions.

In doing so, the study contributes both to theoretical understanding grounded in Resource-Based Theory (RBT) and to practical guidance for enhancing data-driven DM in resource-constrained settings [27].

2. Literature Review

In a rapidly evolving digital economy, organizations are increasingly recognizing data as one of their most valuable strategic resources. Yet, the effective

transformation of data into actionable insights depends on how it is governed, made available, and utilized in DM processes. While prior research has extensively explored individual aspects of DG, DA, and DM, there remains a need for integrated frameworks that examine how these components interact [8]. This section reviews the theoretical and empirical foundations of each construct, situates them within the RBT perspective, and identifies gaps that this study seeks to address.

2.1. Data Governance (DG)

DG refers to the set of policies, procedures, standards, and structures that determine how data is managed, accessed, and used within an organization [6]. It encompasses responsibilities for ensuring data quality, consistency, security, and compliance with regulatory requirements [13]. Effective DG frameworks typically include well-defined roles (such as data stewards), governance councils, and documented procedures for data lifecycle management [34]. Prior research demonstrates that robust DG is linked to improved data quality, greater compliance, and enhanced trust in organizational data. However, without effective execution, governance can remain a "paper policy" that fails to influence daily DM practices [8]. This study adopts the perspective that DG's strategic value lies not only in setting rules but also in enabling the conditions that make relevant, accurate, and timely data accessible for decision-makers.

2.2. Data Availability (DA)

DA refers to the extent to which data is accessible, complete, accurate, and usable when needed [35]. In operational terms, availability is shaped by infrastructure (e.g., databases, integration systems), processes (e.g., data refresh cycles), and cultural practices that encourage data sharing across organizational boundaries [28]. High DA ensures that decision-makers can retrieve relevant information promptly, reducing delays and uncertainty in the decision process. Research highlights that even when governance structures exist, poor availability due to data silos, latency, or incomplete integration can severely limit the practical utility of data for strategic decisions [26]. In this study, DA is positioned as the operational bridge between DG and effective DM.

2.3. Decision-Making (DM)

DM in organizational contexts refers to the processes by which managers and stakeholders select actions from alternatives to achieve desired goals [19]. In modern organizations, DM increasingly relies on integrated, high-quality data to support strategic agility and operational efficiency. Metrics of DM effectiveness include speed, accuracy, consensus, and adaptability [21]. The relationship between DG, DA, and DM has been explored conceptually in prior work, but empirical evidence remains mixed. Some studies find that DG directly influences DM through clearer accountability and standardized processes, while others suggest its effect is largely mediated by improvements in DA [20].

2.4. Resource-Based Theory (RBT) Lens

RBT posits that organizations gain competitive advantage when they possess valuable, rare, inimitable, and non-substitutable resources [24]. Data, when effectively governed and readily available, constitutes a strategic capability that meets these criteria. DG provides the governance "rules of the game," ensuring integrity and compliance, while DA ensures that the data resource is usable in practice [34].

When combined, DG and DA can be considered a dynamic capability integrating managerial processes, technical systems, and cultural norms to enable superior DM. This synergistic view aligns with calls in the literature to treat data not merely as an operational byproduct but as a core strategic asset [15].

2.5. Gaps in Prior Research

Several gaps remain in understanding how DG and DA interact to influence DM, particularly in developing-country contexts:

1. Limited empirical testing of mediation effects. While conceptual models propose that DA mediates the DG-DM relationship, few studies have statistically tested this pathway using robust techniques such as SEM with bootstrapping [4].
2. Overemphasis on governance frameworks without operational follow-through. Much of the literature treats DG as an end in itself, without examining whether governance translates into actionable data use [7].
3. Contextual neglect of developing countries. Research in advanced economies may not generalize to settings with infrastructure constraints, fragmented data systems, and differing organizational cultures [32].
4. Lack of integrated analytical approaches. Few studies combine SEM and regression to provide both theory-driven causal testing and pragmatic predictive insights [23].

Addressing these gaps, this study examines both the mediation and direct effects of DG and DA on DM, focusing on Jordanian organizations undergoing digital transformation but facing persistent data management challenges.

3. Hypotheses Development

Drawing on the RBT and prior empirical findings, this study develops eight hypotheses that capture both the strategic and operational relationships between DG,

DA, and DM, as well as their specific dimensions and demographic influences.

- Hypothesis 1: DG has a positive effect on DA.

Strong DG frameworks rely on clear policies, well-defined standards, and consistent procedures that help improve how data is integrated, maintained, and accessed according to [8]. Moreover, if these governance practices are applied effectively, they tend to create the right technical and organizational environment needed to ensure high DA.

- Hypothesis 2: DA has a positive effect on DM.

DA ensures that relevant, accurate, and timely information is accessible when required, thereby facilitating more efficient, informed, and confident DM processes [19]. Organizations characterized by higher levels of DA are generally less susceptible to delays and experience reduced uncertainty during critical DM activities.

- Hypothesis 3: DG has a positive effect on DM.

DG impacts DM not only through its indirect effect via DA but also through a direct pathway that fosters a culture of accountability, standardization, and trust in data-driven practices [26]. This direct influence highlights the capacity of governance structures to shape decision-making behaviors irrespective of DA constraints.

- Hypothesis 4: DA mediates the relationship between DG and DM.

According to RBT, DG and DA collectively constitute a strategic organizational capability. Within this framework, DA functions as the operational mechanism through which governance principles are translated into measurable enhancements in DM [25]. Empirically, this perspective suggests that the influence of DG on DM is, in part, mediated by its effect on DA.

- Hypothesis 5: DA Timeliness (TIM1) has a positive effect on decision Speed (SPD1).

TIM1 refers to the extent to which data is current and accessible at the moment it is needed. The availability of timely data minimizes latency within DM cycles and supports more agile and responsive organizational actions [12].

- Hypothesis 6: DA Accessibility (ACC1) has a positive effect on decision SPD1.

ACC1 denotes the ease with which authorized users can retrieve the data required for their tasks. Elevated levels of ACC1 reduce the time spent on data search and retrieval, thereby directly contributing to faster DM processes [22].

- Hypothesis 7: DA quality (COM1) has a positive effect on decision SPD1.

In this context, data quality encompasses both completeness and accuracy. High-quality data minimizes the need for repeated validation and verification, thereby fostering greater confidence and efficiency in the DM process [19].

- Hypothesis 8: Managerial role holders perceive higher decision accuracy than clerical role holders.

Managers typically possess broader access to contextual knowledge, decision-support systems, and strategic oversight, which contributes to their perception of organizational decisions as more accurate. In contrast, clerical staff often operate with a more limited perspective, shaped by narrower operational scopes [11].

Figure 1 presents the hypothesized research model, which illustrates the proposed relationships among DG, DA, and DM, including mediation and control effects.

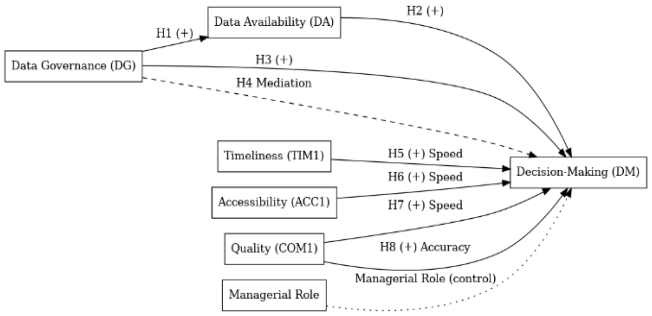


Figure 1. Hypothesized research model.

4. Methodology

In this section, we explain the research method used to examine how DG, DA, and DM connect within Jordanian organizations, like tracing the flow of a report from a database to a manager's desk. This approach keeps the science precise and stays true to the study's theoretical backbone especially the RBT, which underpins every step. Through a quantitative, cross-sectional survey, the research paints a clear snapshot of how organizations run from small nonprofits just starting to digitize to global firms deep into automation. The methodology breaks into five parts: the research design, how the sample and population are chosen, the tools for measuring, the steps for gathering information like having responses on web forms and the techniques used to analyze the data. This clear structure makes the process transparent, lets others replicate the study, and bolsters the accuracy and reliability of the findings.

4.1. Research Design

In this study, we used a quantitative, cross-sectional survey to explore how DG, DA, and DM connect within organizations in Jordan, much like mapping the links in a well-worn chain [16]. We chose this approach to

capture the full range of current practices and perceptions from and across different sectors.

4.2. Population and Sample

The target population comprised employees engaged in roles involving DM responsibilities or data management functions. A purposive sampling strategy was adopted to ensure alignment with the study's objectives and to enhance the relevance of the collected data. A total of 527 responses were initially gathered; however, following data screening for missing values and outliers, 507 responses were retained for analysis. The final sample provided a balanced representation of managerial, clerical, and custodial roles, thereby enabling subgroup comparisons within the analytical framework.

4.3. Measurement Instrument

Our survey questions came from established studies. For DG insights, we used ideas from the research study by Adepoju *et al*. [1]. For DA, we based questions on Wibisono *et al*.'s [35] work and Hannila *et al*.'s [15] study. To understand DM, we used Sahoo and Goswami [26] ideas. To ensure the consistency and reliability of the survey instrument, several statistical tests were conducted. Internal consistency was first assessed using Cronbach's alpha, with all constructs exceeding the recommended threshold value of 0.70, indicating acceptable reliability. Composite Reliability (CR) values were also calculated during the Confirmatory Factor Analysis (CFA), and all exceeded the benchmark of 0.70, further supporting construct reliability. Convergent validity was established through the Average Variance Extracted (AVE), with each construct demonstrating values above the 0.50 threshold, confirming that the latent variables accounted for a substantial proportion of item variance. Discriminant validity was examined using the Fornell Larcker criterion, which showed that the square root of each construct's AVE was greater than its correlations with other constructs. Together, these results demonstrate that the survey instrument exhibited strong reliability and validity, ensuring consistency in measuring the underlying constructs of DG, DA, and DM.

4.4. Data Collection

The questionnaire was administered electronically using Google forms, allowing for broad geographic reach and cost-effective data collection. Participants were informed of the voluntary nature of their involvement and assured of both anonymity and confidentiality. Prior to dissemination, ethical approval was secured from the appropriate institutional review board, thereby ensuring adherence to established ethical standards for research involving human subjects.

4.5. Data Analysis Procedures

The analytical strategy adopted in this study comprised several sequential steps to ensure methodological rigor and robust interpretation of findings. First, preliminary data screening was conducted to detect missing values, assess normality, and identify outliers. Second, CFA was employed to evaluate the construct validity of the measurement model, including both convergent and discriminant validity, using factor loadings, AVE, and CR. Third, SEM was conducted using the lavaan package in R to examine the hypothesized direct and mediated relationships among DG, DA, and DM [3]. Mediation effects were assessed through bias-corrected bootstrapping procedures with 5,000 resamples. Fourth, multiple regression analysis was utilized to assess the predictive strength of DA dimensions TIM1, ACC1, and quality along with managerial role, on decision SPD1 and accuracy. This analysis incorporated regression coefficients (β), significance levels (p-values), and explained variance (R^2). Finally, model fit was evaluated using multiple fit indices, including the Comparative Fit Index (CFI), Tucker–Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMR), following the recommended cut-off thresholds established by Hu and Bentler [10, 27].

5. Results

In this section, we share the study's results, organized around the eight proposed relationships (H1-H8) like beads strung neatly on a thread. The results fall neatly into three main components, like files stacked in separate, labeled folders. First, we test the measurement model (section 5.1) with a CFA, checking that it holds together and makes sense like making sure every brick in a wall is solid and in place. Second, we examine the structural model described in section 5.2 with SEM to test the proposed links between DG, DA, and DM, covering hypotheses H1 through H4. Third, we run regression analyses and group comparison tests (see section 5.3) to measure how certain DA dimensions affect decision SPD1, and to examine whether people in different roles view decision accuracy differently tests tied to hypotheses H5 through H8. Together, these analyses reveal how DG influences outcomes both directly and indirectly, show which DA dimensions carry the most predictive weight, and highlight how DM results shift from one organizational role to another sometimes as sharply as a manager's quick call versus an analyst's cautious review.

5.1. Measurement Model (CFA)

CFA was used to evaluate the measurement model and confirm construct validity. All factor loadings were above the recommended 0.70 threshold, showing strong reliability of the indicators. The model fit results

indicated a good fit: $\chi^2/df=2.137$, CFI=0.958, TLI=0.947, RMSEA=0.061, and SRMR=0.048. These scores align with the standards outlined by Hu and Bentler. The values for factor loading for measurement model of each item are shown in Figure 2.

5.2. Structural Model (SEM)

The structural model was tested using SEM to assess the hypothesized relationships among DG, DA, and DM [30]. Model fit indices indicated a good fit to the data, with $\chi^2/df=2.192$, CFI=0.955, TLI=0.944, RMSEA=0.063, and SRMR=0.051. The standardized path coefficients, R^2 values, and indirect effects were examined to evaluate both direct and mediated relationships.

Figure 2 presents the CFA measurement model, showing the factor loadings for each observed variable, standardized path coefficients, indirect effect, R^2 values, and model fit indices.

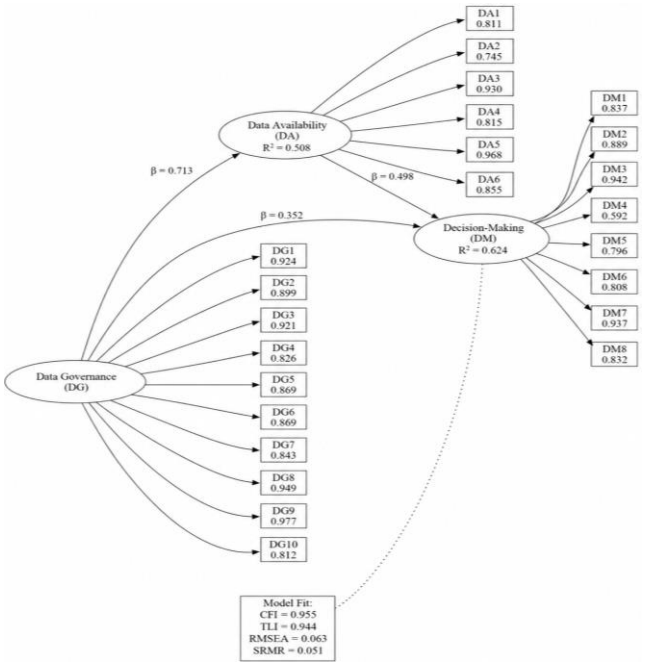


Figure 2. CFA measurement model with standardized factor loadings, standardized path coefficients, indirect effect, R^2 values, and model fit indices.

Figure 2 illustrates the tested SEM model, including standardized path coefficients, indirect effect, R^2 values, and model fit indices. The diagram shows that:

- H1: DG significantly predicts DA (β=0.713, p<.001, R^2=0.508), supporting the hypothesis that strong governance enhances DA.
- H2: DA significantly predicts DM (β=0.498, p<.001, R^2=0.571), confirming its positive influence on DM quality and SPD1.
- H3: DG significantly predicts DM (β=0.352, p<.001), indicating that governance directly influences DM effectiveness.
- H4: DA partially mediates the DG→DM relationship, with an indirect effect of β=0.355 (p<.001). This mediation suggests that a considerable portion of DG's impact on DM operates through improved DA, while a direct pathway remains significant.

These findings demonstrate that both direct and mediated effects are significant [30], aligning with the RBT perspective that DG and DA jointly act as strategic organizational capabilities influencing DM outcomes.

5.3. Regression Model

A multiple linear regression was conducted to examine the extent to which the three dimensions of DA TIM1, ACC1, and Completeness (COM1) predict decision SPD1 as shown in Table1. The regression model was statistically significant, F(3, 146)=37.95, p<.05, explaining R^2=0.703 (70.3%) of the variance in decision SPD1. R-squared (0.703): This value indicates that approximately 70.3% of the variance in decision SPD1 can be explained by the independent variables in the model (DA, data ACC1, and data quality). F-statistic (37.95): this is a measure of the overall significance of the regression model. The high F-statistic and its associated very low p-value (not shown in the Table 1 but visible in the full summary) suggest that the model as a whole is statistically significant, meaning the independent variables collectively have a significant impact on decision SPD1 [18].

The regression equation in standardized Greek notation is expressed as:

$$\hat{Y}(Decision\ Speed)=\beta_0+\beta_1(TIM1)+\beta_2(ACC1)+\beta_3(COM1)+\varepsilon$$

Where:

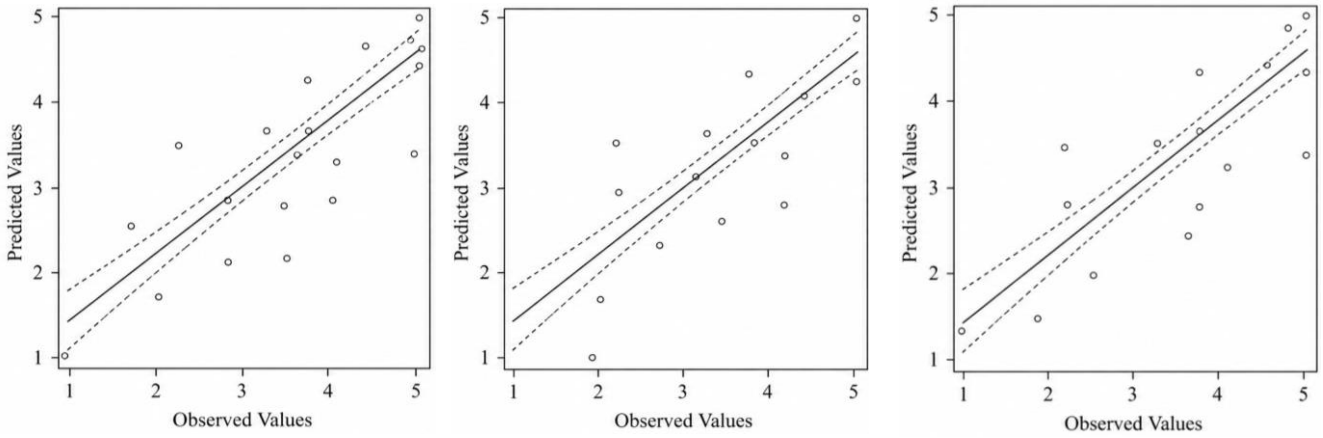
- β_0 =0.268 (intercept).
- β_1=0.340 for TIM1 (p=0.057)→H5 partially supported (marginal effect).
- β_2=0.360 for ACC1 (p=0.020*)→H6 supported.
- β_3=0.216 for COM1 (p=0.184)→H7 not supported.

p<.05 indicates statistical significance.

Table 1. Regression coefficients for predictors of decision SPD1.

Predictor	B	SE	t	p
Intercept	0.268	0.494	0.542	0.590
TIM1	0.340	0.174	1.948	0.057
ACC1	0.360	0.149	2.416	0.020*
COM1	0.216	0.160	1.347	0.184

These results indicate that ACC1 was the only statistically significant predictor of decision SPD1, supporting H6 as shown in Table 1 and illustrated in Figure 3. TIM1 demonstrated a marginal effect (p=0.057), suggesting a potential practical, though not statistically confirmed, influence, partially supporting H5. COM1 was not a significant predictor, providing no support for H7.



a) Model 1. b) Model 2. c) Model 3.

Figure 3. Regression model with standardized coefficients.

5.4. Group Comparison: Perceived Decision Accuracy by Role (H8)

An independent-samples t-test was conducted to compare perceived decision accuracy between managerial and clerical roles. As shown in Table 2, managers reported a significantly higher mean accuracy score (M=4.21, SD=0.57) compared to clerical staff (M=3.89, SD=0.62), t(146)=3.042, p=.003. This finding supports H8, indicating that role differences may influence perceptions of DM quality.

These findings suggest that individuals in managerial positions may benefit from broader data access, greater authority, and strategic involvement, which could explain their higher perceived accuracy.

Table 2. Group comparison: perceived decision accuracy by role.

Role	Mean accuracy	SD	t	p-value
Managerial	4.21	0.57	3.042	0.003
Clerical	3.89	0.62		

These findings provide a basis for exploring, in the discussion section, how role-specific access to resources, authority levels, and organizational expectations may shape perceptions of decision quality in Jordanian organizations.

6. Discussion

This section interprets the study's findings in relation to the proposed hypotheses (H1-H8), theoretical framework, and existing literature. By integrating the results from the SEM mediation analysis, regression modeling, and group comparisons, it is possible to understand how DG and DA jointly and independently influence DM within Jordanian organizations. The discussion first evaluates the mediation pathways through the lens of the RBT, then examines the specific predictors of decision SPD1 identified in the regression model, and finally reflects on how these results compare with prior research. The implications of these findings are considered within the context of the unique challenges and opportunities present in the Jordanian organizational environment.

6.1. Mediation Pathways in the Context of RBT

The SEM results confirm H1, showing that DG has a strong positive effect on DA (β=0.713, p<.001). This supports the idea that well-structured governance processes enhance the availability of relevant and high-quality data, aligning with RBT's view of governance as a capability that enables better utilization of information resources [9]. H2 is also supported, with DA significantly predicting DM (β=0.498, p<.001). This underscores DA's role as a direct enabler of decision quality, ensuring timely and relevant insights for managers [24]. The direct link between DG and DM (H3) is significant (β=0.352, p<.001), suggesting that governance frameworks not only work through DA but also improve DM via other mechanisms such as compliance enforcement, standardized processes, and cultural shifts toward evidence-based management [19]. Finally, H4 the mediation hypothesis is supported, with DA partially mediating the DG-DM relationship (indirect β=0.355, p<.01). The partial mediation pattern means that while DG improves DM by increasing DA, governance also contributes directly through structural and procedural enhancements [19, 31].

6.2. Regression Analysis and Key Predictors of Decision Speed

The multiple regression analysis addressed H5–H7 by examining which dimensions of DA most influence decision SPD1. The model explained 70.3% of the variance in decision SPD1 (R^2=0.703) and was statistically significant, F(3, 146)=37.95, p<.001.

- H5 (Timeliness→Decision Speed) received partial support, with TIM1 (β=0.340, p=0.057) showing a marginally significant positive effect.
- H6 (Accessibility→Decision Speed) is supported, as ACC1 (β=0.360, p=0.020) emerged as the strongest and only statistically significant predictor.
- H7 (Completeness→Decision Speed) is not supported; COM1 (β=0.216, p=0.184) showed no significant effect.

These results highlight that in Jordanian organizations, rapid access to information is more critical for DM SPD1 than having fully complete datasets, which reflects a pragmatic orientation in fast-moving operational environments [2].

6.3. Role-Based Differences in Perceived Decision Accuracy

H8 is supported through the group comparison analysis. Managers reported significantly higher perceived decision accuracy (M=4.21, SD=0.57) compared to clerical staff (M=3.89, SD=0.62), t(146)=3.042, p=.003. This suggests that role-based differences such as access to strategic resources, decision authority, and broader organizational perspectives affect how individuals evaluate the accuracy of their decisions.

6.4. Alignment and Contrast with Prior Literature

The confirmation of H1-H4 aligns with studies such as Sargiotis [29], Adepoju *et al*. [1], and Ates and Garip [6] which emphasize governance's role in enhancing data quality and availability. However, the stronger direct effect of DG on DM found here diverges from Grebovic *et al*. [14], who observed a more dominant indirect pathway in mature IT contexts.

The regression findings (H5-H7) are consistent with Tatipamula [33], who reported that ACC1 can outweigh COM1 in dynamic environments. This is particularly relevant in Jordan, where operational constraints make speed a competitive advantage. The support for H8 aligns with role-based DM literature, indicating that managerial positions often benefit from greater data access and interpretive skills, leading to higher perceived accuracy [27].

7. Conclusions

In the era of digital transformation, the ability to govern and utilize data effectively is a decisive factor for organizational success. This study set out to examine how DG influences DM both directly and indirectly through DA, focusing on Jordanian organizations where challenges in ACC1 and quality persist. By integrating SEM for H1-H4 and multiple regression and group comparison analyses for H5-H8, we offered a comprehensive view of how governance, availability dimensions, and organizational roles interact to shape decision outcomes.

7.1. Summary of Main Findings

The SEM results confirmed H1-H4, showing that DG significantly predicts DA (β=0.713, p<.001) and DM (β=0.352, p<.001), with DA also significantly predicting DM (β=0.498, p<.001). DA partially mediated the DG-DM relationship (indirect β=0.355, p<.01), indicating that governance enhances DM both directly and indirectly via improved availability. The regression analysis addressed H5-H7 and revealed that ACC1 (H6) was the only statistically significant predictor of decision SPD1 (β=0.360, p=0.020), while TIM1 (H5) showed a marginal effect (β=0.340, p=0.057) and COM1 (H7) was not significant (β=0.216, p=0.184). The model was significant, F(3, 146)=37.95, p<.001, and explained 70.3% of the variance in decision SPD1 (R^2=0.703). Finally, the group comparison supported H8, with managers reporting significantly higher perceived decision accuracy (M=4.21) than clerical staff (M=3.89), t(146)=3.042, p=.003, indicating role-based differences in perceptions of decision quality.

7.2. Theoretical Contributions

Theoretically, this study extends the RBT by demonstrating that DG and DA together form a strategic organizational capability in a developing-country context. The support for H1-H4 highlights that governance not only improves the flow and quality of data but also directly shapes DM processes. The combination of SEM and regression adds methodological value, capturing both macro-level structural relationships and micro-level performance predictors.

7.3. Managerial Contributions

For practitioners, the findings from H5-H8 indicate that investments in DG should prioritize improving ACC1 of data, alongside maintaining TIM1 and quality standards. While COM1 did not emerge as a significant factor in decision SPD1, rapid access to information appears critical in Jordan's dynamic and resource-constrained environment. Managers should aim to reduce access barriers, simplify retrieval processes, and embed governance practices that ensure data flows seamlessly across hierarchical levels. The role-based differences found in H8 suggest that empowering non-managerial staff with better data tools and access could help close the perceived accuracy gap.

7.4. Limitations and Future Research Directions

Several limitations should be acknowledged. First, the cross-sectional design limits causal interpretations; longitudinal or experimental designs could test how DG-DA-DM relationships evolve over time. Second, the focus on Jordanian organizations may limit generalizability; future research could compare results with developed economies to assess contextual variations. Third, the availability dimensions examined here TIM1, ACC1, and COM1 could be expanded to include relevance, consistency, and security. Finally, integrating qualitative interviews could yield deeper insights into the cultural and behavioral enablers or

barriers to effective data use in DM.

References

[1] Adepoju A., Austin-Gabriel B., Eweje A., and Hamza O., "A Data Governance Framework for High-Impact Programs: Reducing Redundancy and Enhancing Data Quality at Scale," *International Journal of Multidisciplinary Research and Growth Evaluation*, vol. 4, no. 6, pp. 1141-1154, 2023. https://www.allmultidisciplinaryjournal.com/uploads/archives/20250116173709_MGE-2025-1-077.1.pdf

[2] Al-Hinawi A. and Alelaimat R., "Using Deep Learning for Profitable Concrete Forecasting Methods," *The International Arab Journal of Information Technology*, vol. 21, no. 5, pp. 832-843, 2024. https://doi.org/10.34028/iajit/21/5/5

[3] Almajali M., Nasrawin L., Alqudah F., Althunibat A., and Albalawee N., "Technical Service Error as a Pillar of Administrative Responsibility for Artificial Intelligence (AI) Operations," *International Journal of Advances in Soft Computing and its Applications*, vol. 15, no. 3, pp. 274-287, 2023. DOI: 10.15849/IJASCA.231130.18

[4] Alzyadat W., Muhairat M., Alhroob A., and Rawashdeh T., "A Recruitment Big Data Approach to Interplay of the Target Drugs," *International Journal of Advances in Soft Computing and its Applications*, vol. 14, no. 1, pp. 1-13, 2022. DOI: 10.15849/IJASCA.220328.01

[5] Asto Buditjahjanto I., Pratama A., and Samani M., "The Intelligent Decision System Based on Hybrid Decision Tree to Determine the Level of Lecturer Performance," *International Journal of Advances in Soft Computing and its Application*, vol. 16, no. 3, pp. 219-232, 2024. DOI: 10.15849/IJASCA.240330.13

[6] Ates V. and Garip A., "Data Governance for Businesses: Challenges, Recommendations, and Critical Success Factors," *Acta Infologica*, vol. 9, no. 1, pp. 339-358, 2025. file:///C:/Users/user/Downloads/ACTA_TamMetinMakale%20(1).pdf

[7] Bena Y., Ibrahim R., Mahmood J., Al-Dhaqm A., and et al., "Big Data Governance Challenges Arising from Data Generated by Intelligent Systems Technologies: A Systematic Literature Review," *IEEE Access*, vol. 13, pp. 12859-12888, 2025. https://ieeexplore.ieee.org/document/10839423

[8] Bliznak K., Munk M., and Pilkova A., "A Systematic Review of Recent Literature on Data Governance (2017-2023)," *IEEE Access*, vol. 12, pp. 149875-149888, 2024. https://ieeexplore.ieee.org/stamp/stamp.jsp?arnumber=10707270

[9] Bramantyo S. and Pujianto W., "Driving Structural Equation Modeling (SEM) Growth Innovation and Digital Capabilities," *Indonesian Journal of Innovation Studies*, vol. 26, no. 3, pp. 1-18, 2025. https://doi.org/10.21070/ijins.v26i3.1376

[10] Brysbaert M., Questioning the Exclusive Focus on the Hu and Bentler Norms in Factor Analysis: Practice-Oriented Likert Scale Indicators Based on an Analysis of 161 Datasets, https://scispace.com/pdf/questioning-the-exclusive-focus-on-the-hu-and-bentler-norms-4v79gvi9n4.pdf, Last Visited, 2025.

[11] Caligiuri P., Collings D., De Cieri H., and Lazarova M., "Global Talent Management: A Critical Review and Research Agenda for the New Organizational Reality," *Annual Review of Organizational Psychology and Organizational Behavior*, vol. 11, no. 1, pp. 393-421, 2024. https://doi.org/10.1146/annurev-orgpsych-111821-033121

[12] Chukwurah N., Ige A., Idemudia C., and Eyieyien O., "Integrating Agile Methodologies into Data Governance: Achieving Flexibility and Control Simultaneously," *Open Access Research Journal of Multidisciplinary Studies*, vol. 8, no. 1, pp. 045-056, 2024. https://doi.org/10.1146/annurev-orgpsych-111821-033121

[13] Eryurek E., Gilad U., Lakshmanan V., Kibunguchy-Grant A., and Ashdown J., *Data Governance: The Definitive Guide*, O'Reilly Media, Inc., 2021. https://www.oreilly.com/library/view/data-governance-the/9781492063483/

[14] Grebovic M., Filipovic L., Katnic I., Vukotic M., and Popovic T., "Machine Learning Models for Statistical Analysis," *The International Arab Journal of Information Technology*, vol. 20, no. 3A, pp. 505-514, 2023. https://www.iajit.org/upload/files/doi-61684824431-38.pdf

[15] Hannila H., Silvola R., Harkonen J., and Haapasalo H., "Data-Driven Begins with DATA; Potential of Data Assets," *Journal of Computer Information Systems*, vol. 62, no. 1, pp. 29-38, 2022. https://www.tandfonline.com/doi/full/10.1080/08874417.2019.1683782

[16] Hunziker S. and Blankenagel M., *Research Design in Business and Management: A Practical Guide for Students and Researchers*, Springer Gabler, 2024. https://link.springer.com/chapter/10.1007/978-3-658-42739-9_10

[17] Ibrahim A., Mohamed I., and Satar N., "Factors Influencing Master Data Quality: A Systematic Review," *International Journal of Advanced*

Computer Science and Applications, vol. 12, no. 2, pp. 181-192, 2021. file:///C:/Users/user/Downloads/Factors_Influencing_Master_Data_Quality_A_Systemat.pdf

[18] Jaradat Y., Masoud M., Manasrah A., Alia M., et al., "Exploring the Intersection of Information Theory and Machine Learning," *The International Arab Journal of Information Technology*, vol. 22, no. 5, pp. 845-858, 2025. https://doi.org/10.34028/iajit/22/5/1

[19] Koziol-Nadolna K. and Beyer K., "Determinants of the Decision-Making Process in Organizations," *Procedia Computer Science*, vol. 192, pp. 2375-2384, 2021. https://www.sciencedirect.com/science/article/pii/S1877050921017439

[20] Li J. and Wang R., "An Anomaly Detection Method for Weighted Data Based on Feature Association Analysis," *The International Arab Journal of Information Technology*, vol. 21, no. 1, pp. 117-127, 2024. https://doi.org/10.34028/iajit/21/1/11

[21] Mohamed A. and Jebapillai C., "A Machine Learning Attempt for Anatomizing Software Risks in Small and Medium Agile Enterprises," *The International Arab Journal of Information Technology*, vol. 22, no. 3, pp. 547-559, 2025. https://doi.org/10.34028/iajit/22/3/10

[22] Naqvi R., Soomro T., Alzoubi H., Ghazal T., and Alshurideh M., *Advances in Intelligent Systems and Computing*, Springer, 2021. https://link.springer.com/chapter/10.1007/978-3-030-76346-6_73

[23] Petersen A., Ekstrom C., Spirtes P., and Osler M., "Constructing Causal Life-Course Models: Comparative Study of Data-Driven and Theory-Driven Approaches," *American Journal of Epidemiology*, vol. 192, no. 11, pp. 1917-1927, 2023. https://pubmed.ncbi.nlm.nih.gov/37344193/

[24] Ristyawan M., Putro U., and Siallagan M., "Decision Making Mechanism in Resource Based Theory: A Literature Review, Synthesis, and Future Research," *Cogent Business and Management*, vol. 10, no. 2, pp. 1-28, 2023. https://www.tandfonline.com/doi/full/10.1080/23311975.2023.2247217

[25] Roehl U. and Hansen M., "Automated, Administrative Decision-Making and Good Governance: Synergies, Trade-Offs, and Limits," *Public Administration Review*, vol. 84, no. 6, pp. 1184-1199, 2024. https://onlinelibrary.wiley.com/doi/10.1111/puar.13799

[26] Sahoo S. and Goswami S., "A Comprehensive Review of Multiple Criteria Decision-Making (MCDM) Methods: Advancements, Applications, and Future Directions," *Decision Making Advances*, vol. 1, no. 1, pp. 25-48, 2023. https://www.dma-journal.org/index.php/dema/article/view/7/5

[27] Salerno F. and Macada A., "Data-Driven Culture and Orchestrated Data Ecosystems: A Conceptual Model Based on the Resource-Based View," *Revista de Gestao*, vol. 32, no. 2, pp. 123-135, 2025. https://doi.org/10.1108/REGE-12-2024-0184

[28] Salerno F. and Macada A., "The Effect of Data Governance on Data-Driven Culture: The Mediating Effect of Data Quality," *The TQM Journal*, 2025. https://doi.org/10.1108/TQM-08-2024-0304

[29] Sargiotis D., *Data Governance: A Guide*, Springer, 2024. https://link.springer.com/chapter/10.1007/978-3-031-67268-2_1

[30] Sathyanarayana S. and Mohanasundaram T., "Fit Indices in Structural Equation Modeling and Confirmatory Factor Analysis: Reporting Guidelines," *Asian Journal of Economics, Business and Accounting*, vol. 24, no. 7, pp. 561-577, 2024. https://scispace.com/papers/fit-indices-in-structural-equation-modeling-and-confirmatory-3mdlif5qmo

[31] Sharairi J., Saatchi S., Rahahle M., Maabreh H., and et al., *Artificial Intelligence and Economic Sustainability in the Era of Industrial Revolution 5.0*, Springer, 2024.

[32] Shukla S., Bisht K., Tiwari K., and Bashir S., *Data Economy in the Digital Age*, Springer, 2023. https://link.springer.com/chapter/10.1007/978-981-99-7677-5_4

[33] Tatipamula S., "Real-Time vs. Batch Data Processing: When Speed Matters," *World Journal of Advanced Research and Reviews*, vol. 26, no. 1, pp. 1612-1631, 2025. https://doi.org/10.30574/wjarr.2025.26.1.1213

[34] Walsh M., McAvoy J., and Sammon D., "Grounding Data Governance Motivations: A Review of the Literature," *Journal of Decision Systems*, vol. 31, no. sup1, pp. 282-298, 2022. https://doi.org/10.1080/12460125.2022.2073637

[35] Wibisono A., Sammon D., and Heavin C., "Data Availability Issues: Decisions as Patterns of Action," *Journal of Decision Systems*, vol. 31, no. sup1, pp. 241-254, 2022. https://doi.org/10.1080/12460125.2022.2070945

Nasim Matar is an Associate Professor in Software Engineering, Specializing in Business Intelligence, Data Analytics, Software Security, Data Mining, and Structural Equation Modeling. He has published numerous journal and conference papers and has authored several books in the fields of Information Technology and Software Engineering.

Amneh Aljaber is an academic specializing in Business Management at Applied Science Private University. Her research interests focus on business management, business intelligence, and the application of modern analytical approaches to support organizational performance and decision-making. She has contributed to academic research in areas related to management practices, data-driven strategies, and business innovation.

Wasef Mater received his PhD in Information systems from UTM (Malaysia) in 2017, from 2017 until now assistance professor at EBusiness Department in University of Petra, Jordan. Dr. Wasef Mater was reviewer form IRICT conference and publish many papers in Scopus journals. Dr. Wasef Mater is interested in E-business area and health information systems.