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Big Data Analytics: Driving Project Success, Continuity, and Sustainability

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ABSTRACT. This study examines the impact of Big Data applications on various facets of organizational performance, specifically focusing on Business Success, Business Continuity, and Organization Sustainability. Data was collected through self-reported questionnaires and analyzed using SPSS AMOS, incorporating Pearson correlation tests and regression analyses. The results demonstrate that Big Data has a positive but generally weak correlation with these organizational aspects. Notably, mitigating risks and identifying hidden market trends stand out as the most significant factors for Business Success. Business continuity during unexpected disruptions and efficient resource allocation are crucial for Business Continuity. For Organization Sustainability, the direct impact of retrieved data on sustainable decisions and Big Data analytics for planning eco-sustainable futures are key. These findings underscore the potential of Big Data in enhancing organizational performance, suggesting areas where organizations can harness data for strategic advantages. Further research and broader datasets may offer deeper insights into these relationships.

1. Introduction

Amidst the ever-accelerating data deluge, colossal data analytics takes center stage. Its fundamental role lies in extracting invaluable insights from labyrinthine and multifaceted datasets, orchestrating a symphony of information for the discerning conductor, enterprises, scholars, or institutions.

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At its nucleus, the enigma of colossal data analytics confronts the formidable task of managing data that is either unwieldy in its sheer volume, galloping in its pace, or a cacophony of heterogeneity that defies conventional tools [17]. Within its embrace, one encounters the harmonious blend of structured data ensconced in databases and the untamed realms of unstructured data, replete with textual and multimedia treasures.

The orchestration of colossal data analytics unfolds through the meticulous choreography of data curation and scrutiny. This intricate dance unveils the enigmatic tapestry of meaningful motifs, celestial connections, and profound insights. Its performance can don the cloak of descriptiveness, diagnostically probing the depths, prognosticating future trends, or prescribing courses of action, all contingent upon the maestro's intent [1].

This domain leans upon a repertoire of diverse tools and technologies. It employs distributed computational frameworks, such as the venerable Hadoop, harnessing the power of NoSQL databases to orchestrate data's melodious storage [16]. It adorns itself with the embellishments of data visualization software. The ethereal realms of machine learning and artificial intelligence interlace seamlessly into this opus.

Challenges, like menacing serpents, rear their heads, including the vigilant guardianship of data's sanctity, the preservation of privacy, the pursuit of unadulterated data quality, the quest for scalability, and the insatiable appetite for specialized talents in the realms of data science and analytics [28].

Colossal data analytics casts its web of influence upon diverse domains. It acts as the backstage puppeteer in commerce, deciphering the intricate dance of customer behaviors and donning the mantle of vigilant sentinel in fraud detection [21]. In healthcare, it transforms into a healer, offering personalized treatment regimens and foreseeing the shadows of impending maladies. The financial realm witnesses its alchemy, assessing risks and orchestrating the rhythmic ballet of algorithmic trading. In the hallowed halls of science and research, it becomes the torchbearer of discovery, illuminating uncharted territories. Finally, it lends its magic to the Internet of Things (IoT), navigating the labyrinth of interconnected devices [21].

At its essence, colossal data analytics furnishes the catalyst for decision-making, firmly rooted in the terra firma of data-driven insights. It elevates efficiency and fuels innovation across various domains. As technology marches, this symphony's resonance will grow, solidifying its indomitable presence in today's intricate data mosaic [4].

To achieve research objectives, we based our research on three basic questions:

1. What are the specific areas within Project Success that Big Data most significantly affects, and how do these areas correlate with one another?

2. In what ways does Big Data contribute to Business Continuity, particularly during unexpected disruptions, and what are the key drivers of this impact?

3. What are the key aspects of Organization Sustainability that Big Data insights impact?

2. Theoretical framework

Project Success and its Key Metrics

As a project manager, the primary responsibility entails delivering the project within the predefined temporal and budgetary constraints [15]. Nonetheless, project success criteria encompass more than the considerations above.

In addition to the prerequisites, a project manager must collaborate closely with the client, ensuring that the project outcomes align with the client's expectations. Numerous parameters influence the criteria for project success [5].

Key Performance Indicators (KPIs) represent the foremost metric in evaluating project success, rooted in business factors. KPIs serve as a quantifiable means to assess the advantages derived from a project [12]. However, it is crucial to underscore that a project's success cannot be solely contingent on KPI-driven criteria; realistic and attainable goals should be defined to facilitate a successful project [23].

In addition to the core success criteria, several ancillary factors merit consideration in the realm of effective project management and execution, including negotiation, meticulous project planning, task allocation, collaborative goal establishment, periodic evaluation, adept risk management, process enhancement, learning from experiences, and a comprehensive project assessment encompassing both quantitative and qualitative dimensions [15].

The attainment of project success hinges upon thorough planning and adept management. Meeting or exceeding client requirements is a fundamental driver of project success [12]. An understanding of business drivers and alignment with overarching business goals further contribute to the realization of success. The synchronization of KPIs with business objectives facilitates performance tracking and enhancing and measuring project performance [25].

Business Continuity Management (BCM) in the Modern Business Landscape

Business Continuity Management (BCM) is a critical linchpin for organizations in the modern business landscape. It navigates the dynamic challenges of today's world, which include an array of potential disruptions and the rapid evolution of technology [13]. BCM, in this context, takes on several pivotal roles.

In the realm of Business Continuity Management (BCM), regulatory compliance assumes a pivotal role. Government entities and industry overseers are progressively advocating for stringent BCM strategies to shield critical services and ensure adherence to the legal framework [2]. Failure to meet these requisites can result in substantial legal entanglements and financial ramifications.

Moreover, digital transformation has fundamentally reshaped the business landscape, propelling data and technology into the forefront. BCM has shifted its focus towards safeguarding digital assets, instituting robust cybersecurity measures, and implementing disaster recovery protocols to sustain digital operations [11]. These operations often serve as the lifeblood of contemporary organizations.

Financial stability is in jeopardy during business interruptions. BCM strategies are instrumental in curtailing financial losses by expediting the recovery process [11]. Likewise, the sphere of reputation management assumes paramount importance. Competent crisis management through BCM can preclude reputation erosion and sustain public trust [19].

Furthermore, possessing a robust BCM framework can confer a competitive edge [13]. Organizations that can showcase their resilience and dependability are better positioned to allure and retain customers in today's fiercely competitive business environment.

Ultimately, the adaptability and scalability of BCM strategies are indispensable in a world marked by perpetual transformation. Routine testing and revision of plans are critical in accounting for emerging risks and sustaining a state of readiness [13]. In the modern corporate landscape, Business Continuity Management transcends mere contingency planning; it stands as a strategic imperative. It guarantees an organization's capacity to navigate disruptions, embrace change, and, in the end, secure its long-term prosperity [3].

The Role of Big Data Analytics in Project Success

In the contemporary, intricate realm of data-driven business, the pivotal role of expansive data analytics in the triumph of projects cannot be overstated [26]. It is a dynamic, transformative

instrument that bestows decision-making prowess upon entities and elevates operational efficiency and project outcomes [7]

By mining the copious data streams that emerge throughout the lifecycle of a project, big data analytics unveils invaluable insights and intricate patterns [26]. These revelations furnish project overseers and teams with the capacity to discern latent hazards, optimize resource allocation, and refine project blueprints. Furthermore, it permits real-time surveillance, facilitating prompt adjustments to guarantee projects stay their intended course [24].

Additionally, big data analytics is influential in predictive analysis. It offers organizations a vantage point to foresee impending roadblocks and challenges before they mushroom into critical impediments [24]. This proactive approach yields many benefits, including conserving time and resources, reducing the probability of costly delays, and a notable enhancement of overall project accomplishments [22].

Moreover, scrutinizing colossal datasets empowers organizations to unearth concealed trends and intricate correlations that might elude detection through conventional techniques. This intelligence underpins strategic decision-making, thereby enriching project design, supervision, and ultimate achievement [26].

Concerning resource management, big data analytics serves to optimize the allocation of personnel, time, and finances. This optimization, in turn, culminates in the amelioration of resource employment, cost economies, and, ultimately, the elevation of project results [6]. Organizations foster the heightening of global project efficiency by identifying underutilized assets or areas necessitating augmented resource injection.

Another noteworthy facet of big data analytics is its potential to augment stakeholder communication and cooperation [30]. By delivering data-driven revelations, entities can embroil stakeholders with substantiated knowledge, fostering shared comprehension and dedication to realizing project objectives. The ideals of transparency and collaboration represent linchpins in pursuing these objectives, with the concurrence of all involved parties being non-negotiable [30].

Leveraging Big Data for Business Continuity

Harnessing extensive data to ensure business continuity is an imperative stratagem in the contemporary, ever evolving, interconnected corporate milieu [20]. The capacity to amass, scrutinize, and apply copious data reservoirs has transmuted into an indispensable instrument

for entities endeavoring to safeguard their uninterrupted operation, even in the visage of unforeseen disruptions.

Big data proffers a profound comprehension of an entity's functioning, a treasure trove for pinpointing susceptibilities and constructing robustness [20]. By scrutinizing historical data archives and contemporaneous intelligence, firms can rethink potential hazards and blueprint accordingly. This preparatory approach aids entities in traversing diverse predicaments, including natural cataclysms, cyber vulnerabilities, or global fiscal oscillations.

A cardinal virtue of substantial data in business continuity resides in its prescient clout. Institutions can prognosticate prospective complications and initiate preventive countermeasures by analyzing obsolete records and vigilance over present-day trends [18]. This anticipatory modus operandi minimizes downtime, curtails the financial repercussions of interruptions, and heightens the capacity to offer ceaseless amenities to patrons and clientele.

Moreover, big data analytics can hone the allocation of assets in times of turmoil. Via an assessment of data about resource utilization, institutions can guarantee the effective deployment of indispensable assets and workforce [18]. This efficient stewardship of resources can be of paramount significance during disruptions, assisting enterprises in preserving their nucleus operations and satisfying client expectations.

Furthermore, sizeable data can exalt communication and coordination within an entity. The revelations from data scrutiny can be disseminated amongst pertinent divisions, fostering superior decision-making and synchronicity during trying times [10]. This augmented concord begets a sensation of concord and shared accountability, a linchpin for sustaining business continuity.

Promoting Sustainability through Big Data Insights

Fostering sustainability through profound insights from expansive data reservoirs is imperative in our contemporary milieu, where environmental and societal obligations assume everincreasing prominence [27]. The potency of voluminous data manifests in its adeptness at accumulating, scrutinizing, and proffering invaluable intelligence that enterprises can harness to propel eco-responsible practices and constructive transformation [9].

One of the salient facets underpinning the utilization of extensive data for sustainability pertains to its aptitude for furnishing a holistic perspective on an entity's ecological influence [27]. Organizations attain a more profound grasp of their environmental imprints by aggregating data about resource consumption, emissions, and sundry sustainability metrics. This perspicacious comprehension is a conduit to pinpoint domains warranting enhancement, empowering entities to adopt judicious verdicts and institute eco-adaptive alterations [8].

Moreover, the domain of big data analytics extends the capability to dispense foresightful discernments, which, in turn, facilitates tactical preparations for a more eco-sustainable future [14]. By dissecting historical data and tracing trends, enterprises can prefigure forthcoming challenges and prospects linked to sustainability. This proactive approach bequeaths the ability for more astute, long-range scheming and investments in sustainable ventures, ultimately culminating in the gestation of more conscientious and resilient entities [14].

Within resource governance, the panorama is poised for a transformation by deploying comprehensive data in the service of sustainability endeavors. Through analyzing resource consumption data, entities can fine-tune their resource apportionment, curtailing extravagance and inefficacy [14]. In addition to bolstering sustainability, this can translate into financial economies, thus conferring an allure of fiscal prudence upon eco-conscious measures.

Furthermore, extensive data catalyzes transparency and responsibility – two pivotal linchpins for advancing sustainability [29]. The acumen proffered by data scrutiny can be disseminated to stakeholders, including personnel, patrons, and the populace. This transparency begets trust and is a tangible manifestation of an entity's dedication to sustainability, potentially ensnaring environmentally attuned clientele and investors [29].

3. Methodology

The study undertook a quantitative approach, by utilizing responses to a self-reported questionnaire from respondents employed in the sphere of big data analytics in multiple companies. The individuals were reached out to through social media channels with a request to complete the questionnaire with the intent of promoting Big Data. The raw data was then analyzed using SPSS AMOS in search of a correlation value, with a further regression analysis to see the significance of the linear relationship between the variables.

4. Results & Discussion

The results retrieved from the self-reported questionnaires have been run through and analyzed with SPSS AMOS. The results presentation is split into three sections, namely Project Success, Business Continuity, and Organization Sustainability with regards to Big Data application in the organization's operation.

Project Success



Figure 1. Big Data Analytics Impact on Project Success

The r-value in the Pearson correlation test has shown that there is a positive relation between the variables and the overall success of Big Data analytics. The correlation with Big Data influence on Project Success through KPI achievements measured at .10; Big Data impact on informed decisions measured at .04; Big Data analytics helping to mitigate risks in company operations measured at .22; and Big Data analytics helping to see hidden trends in market operations measured at .26 (Fig.1). Although the correlation is weak positive for all variables, the correlation of Big Data helping to mitigate risks and see hidden trends in all company operations is considered as the most significant.

This is also proven in the regression analysis and the P-value. Considering that the results are considered statistically significant if it is lower than the anchor point of .05, only two variables are statistically significant. The capability of mitigating risks to company operations (p-value= .025 <.05) and seeing hidden trends in market operations (p-value= .007 <.05) are considered as the ultimate manifestation of Big Data implementation in company operations (Table 1).

			Estimate	S.E.	C.R.	Р
PROJECT_SUCCESS_BDA	<	BD_positive_influence_prooj ect success	,096	,100	,952	,341
PROJECT_SUCCESS_BDA	<	BD_informed_decisions	,036	,086	,421	,674
PROJECT_SUCCESS_BDA	<	BDA_predict_mitigate_risks	,173	,077	2,24	,025
PROJECT_SUCCESS_BDA	<	BDA_see_hidden_trends	,195	,072	2,707	,007

Table 1. Regression Weights for Big Data Impact on Overall Project Success

Business Continuity



Figure 2. Big Data Analytics Impact on Project Success

The r-value in the Pearson correlation test for Big Data impact on Business Continuity has shown that there is an existing relation between the variables and the overall success of Big Data analytics. The correlation with Big Data influence on business continuity during unexpected disruptions is measured at .31; Big Data impact helping organizations minimize downtime during disruptions through predictive analysis is only .01; Big data analytics assist in efficient resource allocation during times of crisis is measured at -.21; and Communication and coordination within an organization are enhanced through big data during disruptions at .06 (Fig.2). Although the correlation is weak, it is positive for most variables, apart from the impact of Big data on the efficient resource allocation.

The importance and statistical significance of these variables are also proven in the regression analysis and the P-value. The result is considered statistically significant if it is lower than the anchor point of .005 with only two variables being statistically significant. Correlation with Big Data influence on business continuity during unexpected disruptions (p-value= .001 <.05) and Big Data analytics helping in efficient resource allocation for company operations (p-value= .031 <.05) (Table 2). These variables have shown statistical significance in the relationship to Big Data implementation for Business Continuity.

			Estimate	S.E.	C.R.	Р
BC_BDA	<	BDA_crucial_BC	,237	,074	3,219	,001
BC_BDA	<	BDA_helps_PA_minimize_downtime	,033	,071	,467	,641
BC_BDA	<	BDA_helps_efficient_resource_allocation	-,180	,083	-2,162	,031
BC_BDA	<	BDA_helps_communication_coordination	,034	,056	,611	,541

Table 2. Regression Weights for Big Data Impact on Overall Business Continuity

Sustainability



Sustainability Practices of an Organization

The r-value in the Pearson correlation test for Big Data impact on the Sustainability Practices of an Organization has shown that there is an existing relation between the variables and the overall success of Big Data analytics. The correlation with Big Data insights have a positive impact on an organization's efforts to promote sustainability is measured at .23; Big Data impact in helping organizations understand and reduce their environmental footprint is only -.13; Predictive analysis based on big data allows organizations to plan for a more eco-sustainable future is measured at .21; Resource allocation and management are improved through big data for sustainability is at .09; and Transparency and responsibility are promoted through the use of big data in sustainability efforts is measured at .01 (Fig.3). Although the correlation is weak, it is positive for all most variables, apart from Big Data having an impact on reducing the environmental footprint of the company.

The importance and statistical significance of these variables are also proven in the regression analysis and the P-value. The result is considered statistically significant if it is lower than the anchor point of .005 with only two variables being statistically significant. Correlation with Big Data influence on overall sustainability is the direct impact of retrieved data on sustainable decisions made by the company (p-value= .026<.05) and Big Data analytics to plan for a more eco-sustainable future. (p-value= .019 <.05) (Table 3). These variables have shown statistical significance in the relationship to Big Data implementation for Sustainable Practices in the Organization.

			Estimate	S.E.	C.R.	Р
SUSTBDA	<	BDA_ promotes_sustainability	,151	,068	2,222	,026
SUSTBDA	<	BDA_helps_reduce_environ_footprint	-,052	,046	-1,124	,261
SUSTBDA	<	BDA_PA_helps_plan_eco_sustainable_ future	,201	,086	2,347	,019
SUSTBDA	<	BDA_improves_resource_allocation	,078	,091	,861	,389
SUSTBDA	<	BDA_ promotes_transparency_responsibility	,004	,037	,110	,913

Table 3. Regression Weights for Big Data Impact on Overall Sustainability Practices of anOrganization

Project Success

In the realm of Big Data's influence on Corporate Triumph, an exhaustive examination was undertaken, yielding invaluable insights into the importance of numerous variables. The utilization of Pearson correlation analysis facilitated the exploration of the connections between Big Data and various facets of business accomplishment. The findings unveiled a landscape where, while all the correlations bore a positive nature, some exhibited notably robust associations. These revelations illuminate the fundamental elements essential for enterprises in harnessing the potential of Big Data.

Foremost, the preliminary salient observation emanating from the correlation study suggests that the affiliations between Big Data and the scrutinized variables were, in general, of a tepid nature. This implies that within the context of the dataset and the analysis undertaken, the influence of Big Data, in isolation, may not stand as the exclusive determinant of corporate triumph. Nevertheless, it is imperative to acknowledge that the favorable direction of these correlations implies that with an escalation in the adoption of Big Data, there is a corresponding amplification in the favorable repercussions on these variables.

Among the sundry aspects under scrutiny, two correlations shone with distinctive prominence. Firstly, a positive correlation of 0.22 was discerned between Big Data and the amelioration of risks inherent in the operational mechanisms of a corporation. This intimates that Big Data plays a role in elevating risk management strategies, a facet of paramount importance to guarantee the stability and durability of enterprises. Though this correlation may be of modest strength, the constructive connection underscores the imperativeness of harnessing Big Data in addressing perils and ambiguities within the corporate domain. Secondly, the correlation between Big Data and the unveiling of clandestine trends within market operations demonstrated a more robust affinity, sporting a correlation coefficient of 0.26. This outcome accentuates the latent potential of Big Data in divulging insights and trends within the marketplace that might otherwise remain ensconced. The identification and capitalization on these trends endow businesses with a competitive edge, enabling them to adapt and make judicious determinations within the dynamic milieu of corporate operations.

To further substantiate the importance of these findings, a regression analysis was executed. The outcomes of this regression analysis affirmed that, amongst the variables subjected to scrutiny, only two manifested statistically significant associations with Big Data. The p-values for the mitigation of risks (p-value = 0.025) and the identification of covert market trends (p-value = 0.007) dipped below the conventional threshold of significance, typically set at 0.05. This serves to underscore the proposition that these two components, risk mitigation and market trend identification, indeed constitute pivotal constituents of Big Data's contribution to Corporate Triumph.

Business Continuity

The impact of Big Data on the Continuity of Business has been meticulously evaluated through a comprehensive statistical examination. Employing the Pearson correlation test and regression analysis, we've extracted invaluable insights.

The Pearson correlation test has unveiled a general, albeit modest, affirmative correlation between the realm of Big Data and multifaceted dimensions of Business Continuity. This positive relationship implicitly suggests that, in most instances, an augmentation in the utilization of Big Data aligns with an augmentation in the effectiveness of Business Continuity strategies. However, one intriguing anomaly was discovered: the allocation of resources during disturbances exhibited an inverse correlation of -0.21. This signifies that an excessive reliance on Big Data for resource allocation during disruptions might not be conducive to maintaining the efficiency of operations. Of all the revelations unearthed in the correlation analysis, the most remarkable is the affirmative correlation, measuring at 0.31, between the influence of Big Data and its impact on Business Continuity during unforeseen disturbances. This correlation underscores the pivotal role that Big Data assumes in safeguarding operational stability in the face of unanticipated events.

The ensuing regression analysis has underscored the statistical significance of two particular variables. Firstly, the correlation between the influence of Big Data on Business Continuity during

unanticipated disturbances has been established as highly significant, with a remarkably low pvalue of 0.001. This substantiates the idea that harnessing the potential of Big Data is indispensable for upholding Business Continuity, especially when confronted with unforeseen disruptions.

Secondly, the function of Big Data analytics in facilitating efficient resource allocation during disruptive events was also deemed statistically significant, with a p-value of 0.031. This implies that the strategic implementation of Big Data analytics can play an instrumental role in optimizing resource allocation during periods of crisis or upheaval.

Sustainability

The Pearson correlation test, a venerable statistical instrument entrusted with the task of quantifying the strength and orientation of the bond connecting two variables, unveiled a series of perceptive insights. Throughout this inquiry, most variables were seen to be imbued with favorable correlations in the company of Big Data, signifying that as an organization's entanglement with the Big Data sphere deepened, so too did its commitment to sustainability. Nevertheless, an intriguing anomaly surfaced in the variable associated with the reduction of environmental footprints, which exhibited a disquieting -0.13 correlation. This negative association intimates that corporations engrossed in the realm of Big Data may encounter quandaries when endeavoring to curtail their environmental impact. A plausible explanation might be a trade-off between data-fueled decision-making and the adoption of ecologically conscious practices.

One of the most striking revelations arising from the Pearson correlation test was the commendable correlation coefficient of 0.23 linking the wisdom distilled from Big Data and an organization's endeavors to champion sustainability. This revelation underscores the proposition that the judicious utilization of Big Data can indeed be a pivotal driver of sustainability initiatives. This, conceivably, takes shape by proffering invaluable insights and actionable counsel to shepherd organizations toward the embrace of more environmentally considerate practices.

In tandem with the Pearson correlation test, this inquiry further undertook regression analysis, a statistical choreography designed to unearth relationships of genuine statistical import. From this intricate dance of data, two variables emerged as paragons of distinction. The first, "the direct influence of harvested data on decisions pertaining to sustainability," exhibited a p-value of 0.026, thus affirming its significance in the statistical tapestry. This implies that organizations that

harness the power of Big Data to directly inform their sustainability-related decisions are more likely to reap favorable fruits in their noble quest for greater sustainability. The second, "the strategic application of Big Data analytics in devising an ecologically sustainable future," featured a p-value of 0.019, conclusively validating its statistical significance. These findings underscore the boundless potential of Big Data to steer and mold sustainability initiatives within corporate precincts, substantiating the notion that data-derived insights and strategic planning serve as potent catalysts in the relentless pursuit of ecologically sustainable horizons.

5. Conclusion

In the realm of data analytics, the central role played by Big Data in elevating business triumph, ensuring business perpetuity, and fostering organizational endurance comes into sharp focus. While the degrees of association between Big Data and diverse business parameters may exhibit variations, the overarching affirmative bonds unearthed in this investigation underscore its paramount importance in these domains.

This scrutiny accentuates the indispensability of Big Data in averting perils, unearthing concealed market inclinations, and safeguarding business uninterruptedness in the face of unforeseen disruptions. These statistically substantial affiliations attest to the value of harnessing Big Data for ceaseless operations and adaptability within a swiftly shifting business milieu.

Furthermore, the intricate influence of Big Data on the sustainability of organizations is conspicuously manifest, marked by favorable correlations across most parameters. Although trade-offs exist, as indicated by the adverse correlation with the diminishment of environmental footprints, the pronounced positive correlation between insights derived from Big Data and endeavors for sustainability, in tandem with the statistically notable variables revealed in the regression analysis, underscore the potential of Big Data in propelling eco-sustainable practices within organizations.

As enterprises persist in traversing the intricate terrain of contemporary commerce and sustainability, adroitly harnessing the capabilities of Big Data may well prove instrumental in the pursuit of both perpetual prosperity and a more sustainable tomorrow.

Conflicts of Interest: The author(s) declare that there are no conflicts of interest regarding the publication of this paper.

Appendix A: Questionnaire

Demographic Information:

Age: _____ Gender: _____

Occupation: ____

Note. All questions are designed using a five-point Likert scale, where you are requested to input your answer ranging from 1 (Strongly Disagree) to 5 (Strongly Agree).

Part A: Project Success

- 1. Big data analytics have positively influenced Project Success through KPI achievement.
- 2. Big data helps in making more informed decisions that lead to better project outcomes.
- 3. I believe that big data analytics can predict and mitigate risks in business projects effectively.
- 4. Big data analytics can uncover hidden trends and correlations that impact project success.
- 5. Big data analytics is vital for the overall success of the venture

Part B: Business Continuity

1. Big data analytics are crucial for ensuring business continuity during unexpected disruptions.

2. Predictive analysis based on big data helps organizations minimize downtime during disruptions.

3. Big data analytics assist in efficient resource allocation during times of crisis.

4. Communication and coordination within an organization are enhanced through big data during disruptions.

5. Big data analytics is a significant help in promoting business continuity.

Part C: Sustainability

1. Big data insights have a positive impact on an organization's efforts to promote sustainability.

2. Big data helps organizations understand and reduce their environmental footprint.

3. Predictive analysis based on big data allows organizations to plan for a more eco-sustainable future.

4. Resource allocation and management are improved through big data for sustainability.

5. Transparency and responsibility are promoted through the use of big data in sustainability efforts.

6. Big Data Analytics helps the organization to promote sustainability through various tools and approaches.

References

- A. Abu Rumman, L. Al-Abbadi, R. Alshawabkeh, The Impact of Human Resource Development Practices on Employee Engagement and Performance in Jordanian Family Restaurants, Probl. Perspect. Manage. 18 (2020), 130–140. https://doi.org/10.21511/ppm.18(1).2020.12.
- [2] A. Abu Rumman, Impact of Strategic Agility on Business Continuity Management (BCM): The Moderating Role of Entrepreneurial Alertness, J. Manage. Inf. Decis. Sci. 25 (2022), 1–9.
- [3] A. Abu Rumman, Impact of Strategic Vigilance and Crisis Management on Business Continuity Management, J. Manage. Inf. Decis. Sci. 25 (2022), 1–25.
- [4] A. Abu Rumman, L. Al-Abbadi, Structural Equation Modeling for Impact of Data Fabric Framework on Business Decision-Making and Risk Management, Cogent Bus. Manage. 10 (2023), 2215060. https://doi.org/10.1080/23311975.2023.2215060.
- [5] A. Abu-Rumman, Project Management: A Help or Hindrance a Collaborative Research, Al-Balqa J. Res. Stud. 23 (2020), 9.
- [6] A. Nagarathinam, A. Chellasamy, S. Rangasamy, Strategic Data Analytics for Sustainable Competitive Advantage, in: J. Poulose, V. Sharma, C. Maheshkar (Eds.), Data-Driven Decision Making, Springer Nature Singapore, Singapore, 2024: pp. 77–106. https://doi.org/10.1007/978-981-97-2902-9_4.
- [7] V. Shinde, D.D. Patil, K.K. Tripathi, A Comprehensive Survey on Recommender Systems Techniques and Challenges in Big Data Analytics with IoT Applications, J. Law Sustain. Develop. 11 (2023), e02243.
- [8] D.A.A. Moreira, D.M. Rodrigues, Gestão por Competências como Ferramenta Estratégica para Manter a Sustentabilidade Organizacional, Rev. Gest. Soc. Ambient. 17 (2023), e04033. https://doi.org/10.24857/rgsa.v17n9-022.
- [9] E. de J. Lopes, C.R. Colombo, V.P. Da Silva, Measuring Commitment to Sustainability: Proposal of Performance Indicators for a Public University in Northeast Brazil, Rev. Gest. Soc. Ambient. 18 (2023), e04372. https://doi.org/10.24857/rgsa.v18n2-025.
- G. Buzzao, F. Rizzi, The Role of Dynamic Capabilities for Resilience in Pursuing Business Continuity: An Empirical Study, Total Qual. Manage. Bus. Excell. 34 (2023), 1353–1385. https://doi.org/10.1080/14783363.2023.2174427.
- [11] G. Frikha, E. Lamine, D. Kamissoko, F. Benaben, H. Pingaud, Toward a modeling Tool for Business Continuity Management, IFAC-PapersOnLine 54 (2021), 1156–1161. https://doi.org/10.1016/j.ifacol.2021.08.136.
- [12] H.G. Gemünden, P. Lehner, A. Kock, The Project-Oriented Organization and Its Contribution to Innovation, Int. J. Project Manage. 36 (2018), 147–160. https://doi.org/10.1016/j.ijproman.2017.07.009.
- [13] I.H. Sawalha, Business Continuity Management: Use and Approach's Effectiveness, Contin. Resil. Rev. 2 (2020), 81–96. https://doi.org/10.1108/crr-05-2020-0016.

- [14] I.O. Pappas, P. Mikalef, M.N. Giannakos, J. Krogstie, G. Lekakos, Big Data and Business Analytics Ecosystems: Paving the Way Towards Digital Transformation and Sustainable Societies, Inf. Syst. E-Bus. Manage. 16 (2018), 479–491. https://doi.org/10.1007/s10257-018-0377-z.
- [15] K. Davis, Reconciling the Views of Project Success, Project Manage. J. 49 (2018), 38–47. https://doi.org/10.1177/8756972818786663.
- K. Aziz, D. Zaidouni, M. Bellafkih, Real-Time Data Analysis Using Spark and Hadoop, in: 2018 4th International Conference on Optimization and Applications (ICOA), IEEE, Mohammedia, 2018: pp. 1– 6. https://doi.org/10.1109/ICOA.2018.8370593.
- K. Vassakis, E. Petrakis, I. Kopanakis, Big Data Analytics: Applications, Prospects and Challenges, in:
 G. Skourletopoulos, G. Mastorakis, C.X. Mavromoustakis, C. Dobre, E. Pallis (Eds.), Mobile Big Data,
 Springer International Publishing, Cham, 2018: pp. 3–20. https://doi.org/10.1007/978-3-319-67925-9_1.
- [18] M.A.J.A. Alblooshi, A.M. Mohamed, M.M. Yusr, Leadership, Crisis Management, and Business Continuity, South Asian J. Soc. Sci. Human. 4 (2023), 112–128. https://doi.org/10.48165/sajssh.2023.4107.
- [19] M. Alomoush, The Impact of Business Intelligence Systems on Crises Management (Field Study in Greater Amman Municipality), Al-Balqa J. Res. Stud. 24 (2021), 125–145. https://doi.org/10.35875/1105-024-001-009.
- [20] M. Niemimaa, J. Järveläinen, M. Heikkilä, J. Heikkilä, Business Continuity of Business Models: Evaluating the Resilience of Business Models for Contingencies, Int. J. Inf. Manage. 49 (2019), 208–216. https://doi.org/10.1016/j.ijinfomgt.2019.04.010.
- [21] N. Dey, A.E. Hassanien, C. Bhatt, A.S. Ashour, S.C. Satapathy, eds., Internet of Things and Big Data Analytics Toward Next-Generation Intelligence, Springer, Cham, 2018. https://doi.org/10.1007/978-3-319-60435-0.
- [22] N.J. Al Maalouf, S.E. Achi, Project Management and Team Performance: An Applied Transformational Leadership Perspective, J. Law Sustain. Develop. 11 (2023), e1830. https://doi.org/10.55908/sdgs.v11i12.1830.
- [23] P.M. Bican, A. Brem, Managing Innovation Performance: Results from an Industry-Spanning Explorative Study on R&D Key Measures, Create. Innov. Manage. 29 (2020), 268–291. https://doi.org/10.1111/caim.12370.
- [24] P. Mikalef, M. Boura, G. Lekakos, J. Krogstie, Big Data Analytics and Firm Performance: Findings from a Mixed-Method Approach, J. Bus. Res. 98 (2019), 261–276. https://doi.org/10.1016/j.jbusres.2019.01.044.

- [25] R. Alshawabkeh, A. Abu Rumman, L. Al-Abbadi, A. Abu-Rumman, The Intervening Role of Ambidexterity in the Knowledge Management Project Success Connection, Probl. Perspect. Manage. 18 (2020), 56–66. https://doi.org/10.21511/ppm.18(3).2020.05.
- [26] S. Bag, J.H.C. Pretorius, S. Gupta, Y.K. Dwivedi, Role of Institutional Pressures and Resources in the Adoption of Big Data Analytics Powered Artificial Intelligence, Sustainable Manufacturing Practices and Circular Economy Capabilities, Technol. Forecast. Soc. Change 163 (2021), 120420. https://doi.org/10.1016/j.techfore.2020.120420.
- [27] S. Bag, L.C. Wood, L. Xu, P. Dhamija, Y. Kayikci, Big Data Analytics as an Operational Excellence Approach to Enhance Sustainable Supply Chain Performance, Resour. Conserv. Recycl. 153 (2020), 104559. https://doi.org/10.1016/j.resconrec.2019.104559.
- S. Tiwari, H.M. Wee, Y. Daryanto, Big Data Analytics in Supply Chain Management between 2010 and 2016: Insights to Industries, Computers Ind. Eng. 115 (2018), 319–330. https://doi.org/10.1016/j.cie.2017.11.017.
- [29] T. Choi, S.W. Wallace, Y. Wang, Big Data Analytics in Operations Management, Prod. Oper. Manage. 27 (2018), 1868–1883. https://doi.org/10.1111/poms.12838.
- [30] V. Kayser, B. Nehrke, D. Zubovic, Data Science as an Innovation Challenge: From Big Data to Value Proposition, Techn. Innov. Manage. Rev. 8 (2018), 16–25. https://doi.org/10.22215/timreview/1143.