

Impact of HR Analytics Utilization on Organizational Communication Effectiveness

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ABSTRACT

This study examines the implications of utilizing HR analytics in assessing the effectiveness of organizational communication within the corporate sector of Karachi, as well as the positive mediating role of data pillars in shaping decision-making culture. Although the use of HR analytics is increasingly prevalent in corporations, its direct impact on communication effectiveness remains insufficiently investigated in the local context of Karachi. The research aims to determine whether and how the integration of HR analytics can enhance communication within organizations, both directly and indirectly, by creating a data-informed decision-making environment. A quantitative methodology was employed, and an online survey was conducted among 160 corporate employees who were conveniently sampled. The data were collected for analysis using a Likert scale questionnaire and were analyzed in SPSS, incorporating mediation analysis via the PROCESS macro developed by Andrew Hayes. The outcomes reveal that HR analytics have a powerful, positive influence on communication effectiveness ($\beta = 0.34, p < 0.001$) and support the development of a data-driven culture ($\beta = 0.16, p = 0.01$). This culture, in turn, has a significant effect on communication ($\beta = 0.19, p = 0.01$). However, the mediating effect of this relationship was statistically insignificant (indirect effect = 0.03), indicating partial mediation. The

Information is derived from these findings; it is recommended that organizations strengthen their HR analytics implementation and foster a culture of data-driven decision-making that improves communication outcomes.

Keywords: HR Analytics, Organizational Communication, Data-Driven Culture, Mediation Analysis, Karachi

INTRODUCTION

In the fast-paced business world, the importance of Human Resource (HR) analytics has increased significantly as organizations strive to leverage information from tools based on HR analytics to enhance their HR practices and optimize organizational efficiency. HR analytics is an application of data and statistical approaches to analyzing human resource-related data, providing organizations with evidence-based information to inform better decision-making, workforce planning, and performance management (Marler & Boudreau, 2017). Organizational communication is one of the key areas in which HR analytics is expected to have a significant impact, as it plays a fundamental role in shaping organizational culture, collaboration, and performance (Men, 2014).

Working effectively in an organization to foster collaboration and facilitate clear decision-making, while maintaining employee-level activities, is a crucial principle of communication in organizations (Mayer, 2018). Nevertheless, although HR analytics is garnering increased attention with the accumulation of research, its direct connection with its impact on organizational communication effectiveness is rarely touched upon, particularly within the Karachi corporate sector. A grasp of the

opportunity to deploy HR analytics to enable effective communication practices in a data-driven culture of decision-making is crucial to improve organizational outcomes.

Following the tracks of evidence-based culture in decision-making, when the evidence is the central factor in the process of decision-making, transparency, accountability, and informed communication among organizations can be encouraged (Angrave et al., 2016). However, although various researchers have carried out extensive studies that focus on how significantly the use of HR analytics does or does not affect the decision-making process, there still has not been much research written on the subject matter involving the particular impact of HR analytics on the efficiency of communication in the setting of corporate institutions specific to Pakistan. This research intends to fill this gap by examining the application of HR analytics and how they are affecting the communication in Karachi's corporate world, with a particular focus on the mediating impact of the data-driven culture of decision-making.

Problem Statement

In the modern business environment, organisations are also becoming interested in using Human Resource (HR) analytics to make data-driven decisions and build stronger levels of organisational performance. Among the avenues in which HR analytics plays a major role is in organizational communication. Organizational communication plays an essential role in its working processes because it determines decision-making, collaboration, and employee satisfaction (Men, 2014). Despite the increased volume of studies on the concepts of HR analytics and its

potential advantages, scant studies exist on how the cultures surrounding data-driven decision-making (DDDM) developed by the adoption of HR analytics can be used to directly respond to organizational communication practices (Angrave et al., 2016).

There is a significant gap in the empirical studies linking the use of HR analytics with the effectiveness of organizational communication in the corporate sector of Karachi. Information on how HR analytics can aid in effective communications in a data-driven culture can be a useful piece of knowledge to foster a successful culture in any organization that aims at improving its HR and communication processes. This study tries to bridge this gap by emphasizing the transformative nature of HR analytics in augmenting communication among the Karachi-based organizations.

Significance of the Study

The overall worth of the study is immense, especially involving the material benefit of HR analytics, in addition to operational contracting. The study adds to the body of literature by clearly demonstrating the connection between analytics and communication efficacy. It also provides practical advice for enhancing internal communication strategies using data-driven HR procedures. Additionally, it promotes a change in organizational cultures toward ones that are grounded in facts, highlighting the strategic significance that HR analytics play in contemporary organizational growth.

Research Objectives

- To investigate the impact of HR Analytics on Organizational Communication Effectiveness.
- To explore the influence of HR Analytics on fostering a Data-Driven Decision-Making Culture within organizations.
- To assess the relationship between a Data-Driven Decision-Making Culture and Organizational Communication Effectiveness.
- To examine whether a Data-Driven Decision-Making Culture mediates the relationship between HR Analytics and Organizational Communication Effectiveness.

LITERATURE REVIEW

HR Analytics and Organizational Communication

The emergence of HR Analytics represents a significant leap in human capital management, transforming it into a systematic process for effective management. Conventional HR decisions were based on intuition and previous experience. However, with the emergence of data analytics and digital technologies, HR functions rely on data to not only create strategic alignment but also enhance operational efficiency (Margherita & Braccini, 2023). Organizational communication, however, plays a key role in the passage of information from one level of the organization to subsequent levels. Effective communication fosters clarity, coordination, and motivation among employees, enhancing organizational performance. The introduction of HR Analytics into the practice of communication enables the diagnosis of communication bottlenecks and the monitoring of employee engagement levels, facilitating better alignment between

strategic targets and employee understanding (Minbaeva, 2021). Hence, a crossing of these domains holds engaging levers of organizational development.

Role of HR Analytics in Enhancing Communication Effectiveness

Through HR Analytics, communication is facilitated, as it provides evidence-based insights into the company's workforce needs, workforce behavior, and engagement levels. With Advanced analytics tools, employee feedback, absenteeism trends, and performance reviews can be used to identify areas of communication breakdown (Fontaine et al., 2019). Additionally, HR dashboards and real-time data visualization help leaders present progress and key updates more clearly. As an example, the predictive models can identify employees at risk and initiate proactive communication to promote employee retention and employee health.

McIver et al. (2018) also state that when organizations combine analytics with their HR-related activities, they gain more transparency, a more effective feedback loop, and more responsiveness. The result is more accurate, time-bound, and effective communication in terms of behavioral and attitudinal outcomes.

Development of a Data-Driven Decision-Making (DDDM) Culture

To initiate such a climate of data-driven decision-making (DDDM), data application should become a daily practice and a core value of the organization. In this kind of culture, the decisions made are grounded in facts, intelligence, and analytics, rather than assumptions. This translates

to HR departments developing systems and skills that enable reasonable interpretation of HR data. Van den Heuvel and Bondarouk (2021) state that a DDDM culture requires three main elements. Data availability, analytic ability, and decision-readiness. When data is considered a strategic asset, it becomes easier for employees and managers to trust organizational communication, as it is based on factual and measurable insights. This enhances communication efforts across departments in terms of both credibility and effectiveness.

Human Resource Analytics and the Influence It Has on DDDM Culture

The DDDM culture begins with the adoption of HR Analytics. As analytics tools are deployed for recruitment, training, and performance management, HR departments begin to gain recognition from the wider organization for the role that data plays in delivering value. HR Analytics plays a blueprint role in data usage across other functions, driving both a common language and a consistent approach to decision-making. Research by Giermindl et al. (2022) reveals that HR Analytics is providing organizations with a cultural shift that fosters more collaboration, knowledge sharing, and evidence-based conversations. Such cultural attributes are strongly associated with open and transparent communication systems, underscoring the importance of HR Analytics as a tool to establish the desired tone for organizational culture and communication norms.

Influence of DDDM Culture on Communication Effectiveness

A strong DDDM culture means that communication becomes more coherent, relevant, and transparent. The reason for this is that messages

are grounded in the data, making them credible and actionable. Workers are more responsive to messages that they can resolve, as these are based on reliable analysis rather than managerial hunches. According to Bondarouk et al. (2017), in data-driven organizations, communication effectiveness is enhanced through the processes of continuous information sharing, collaboration in decision-making, and reduced ambiguity. Moreover, the feedback can be specific, making communication more developmental than judgmental. The DDDM culture also promotes stability and transparency to everyone regarding the establishment of standard communication practices, among which the use of KPIs and dashboard figures is significant.

Mediation by DDDM Culture between HR Analytics and Communication

Even though HR Analytics suggests the structure through which data is gathered and transformed into insights, the outcome of the attempt to transform communication is reliant on the organizational culture. The tools of high-level analytics are not sufficient without a data-driven culture to monitor their impact. The culture of DDDM is therefore important. McIver et al. (2018) remark that organizational culture serves as a filter, and it defines whether or not data-generated insights will be used. When HR Analytics positively influences the DDDM culture, they not only inform but also turn the communication strategy into an improved, data-literate and working form. Therefore, this mediating task plays an indispensable role, as it is important to understand it as a researcher or

practitioner who may want to use HR Analytics in order to enhance communication.

THEORETICAL FRAMEWORK

The research theory relies on the resource-based view (RBV), which was advanced by Barney (1991), and socio-technical systems theory (STS), advanced by Trist and Bamforth (1951). These structures provide a sound basis on how HR Analytics and organizational culture can influence the communication process in terms of effectiveness.

Resource-Based View (RBV)

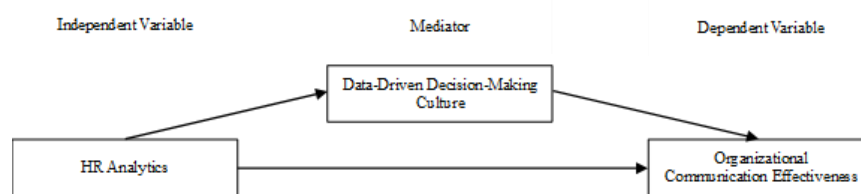
According to the RBV, organizations achieve competitive advantage by exploiting valuable, rare, inimitable, non-substitutable (VRIN) resources (Barney, 1991). HR Analytics is viewed as a strategic resource under RBV due to the data-driven insights it contributes to the human capital decision-making process. When applied wisely, HR Analytics enhances existing functions, such as the communication process, by increasing the accuracy, relevance, and timeliness of information dissemination (Margherita & Braccini, 2023). Thus, HR Analytics not only supports operational efficiency but also becomes a source of sustained competitive advantage through its transformation of organizational communication practices.

Socio-Technical Systems Theory (STS)

STS celebrates the contiguity that exists between social systems (people, culture, communication) and technical systems (tools, data, analytics). This theory is applicable to considering whether HR Analytics (the

technical system) and Data-Driven Decision-Making (a cultural and behavioral issue), when used together, influence communication effectiveness. The integration of both systems from the perspective of Trist and Bamforth (1951) results in a more adaptable and effective organization. Recent research confirms that integrating data analytics into the culture of decision-making facilitates more transparent and evidence-based communication (Bonddecision-making processarouk et al., 2017; van den Heuvel & Bondarouk, 2021).

CONCEPTUAL FRAMEWORK



Study Hypotheses

H1: HR Analytics has a significant effect on Organizational Communication Effectiveness.

H2: HR Analytics has a significant effect on Data-Driven Decision-Making Culture.

H3: A data-driven decision-making culture has a significant effect on Organizational Communication Effectiveness.

H4: A data-driven decision-making culture mediates the relationship between HR Analytics and Organizational Communication Effectiveness.

RESEARCH METHODOLOGY

Research Design

The scope of investigation is undertaken through a quantitative research design to examine the impact of HR Analytics Utilization on Organizational Communication Effectiveness, with a focus on the transformative role of a data-driven decision-making culture. A survey method is used to gather primary data, while secondary data will enrich the scope and depth of the research.

Study Area and Population

The research is conducted in Karachi's corporate sector, focusing on organizations that are known to prioritize human resource management and effective communication practices. This context is selected due to the increasing tendency to use HR analytics to enhance organizational effectiveness in communication and decision-making.

Sample Size and Sampling Method

A total of 160 respondents were sampled for the study. Convenience sampling is applied to achieve representativeness. This method is selected because it is suitable for reaching respondents during a given period. The selection of participants is drawn from a diverse range of corporate organizations in Karachi to introduce variation in industry and organizational size.

Data Collection Methods

Corporate sector participants are provided with a structured survey questionnaire to collect data. The questionnaire includes sections such as the HR Analytics application, the effectiveness of organizational communication, and the role of a data-driven decision-making culture.

Survey Instrument and Data Measurement

The survey uses a Likert scale to measure responses. The Likert Scale ranges from 1 (strongly disagree) to 5 (strongly agree), allowing participants to express their views on the utilization of HR Analytics and its impact on organizational communication. The scale is used to maintain uniformity and reliability of responses by different participants.

The sample consisted of professionals from medium- and large-scale corporate companies in industries such as banking, FMCG, telecom, and IT services, who worked in HR, operations, management, and strategic planning departments. Additionally, a pilot study was conducted with 15 relevant specialists (academics and HR professionals) to assess the questionnaire's structure, relevance, and clarity.

Three major constructs were included in the evaluation tool for this study: Organizational Communication Effectiveness (5 items), Data-Driven Decision-Making Culture (5 items), and HR Analytics Utilization (5 items). A five-point Likert scale, with 1 denoting "strongly disagree" and 5 denoting "strongly agree," was used to rate each issue, enabling respondents to express their opinions consistently and gradably. Although the items were self-developed, they were thoroughly based on pertinent empirical and theoretical research. The frameworks and operational

indicators proposed by Margherita and Braccini (2023), who described HR analytics methods in strategic and operational contexts, served as a guide for the creation of the HR Analytics Utilization elements.

McIver et al. (2018) highlighted how analytics integration impacts organizational decision-making behavior and promotes evidence-based practices, serving as the inspiration for the items evaluating Data-Driven Decision-Making Culture. The elements addressed the question of Organizational Communication Effectiveness and were inspired by the Angrave et al. (2016) study of the role of HR practices in improving communication transparency and clarity. 15 relevant specialists (HR practitioners and scholars) were involved in a pilot study of the survey tool, to provide content validity and clarity. They provided feedback that would improve them. The internal consistency of scale items was also established by the Cronbach Alpha values that ranged between 0.730 and 0.814. This indicated that the constructs were all at acceptable to good levels of reliability.

Reliability Testing: Cronbach's Alpha measures the reliability of the Likert scale items. Values above 0.7 are often regarded as satisfactory for dependability, and this measure ensures that the survey instrument is internally consistent.

Table 1: Cronbach's Alpha

Variable	No of Items	Cronbach's Alpha
HR Analytics	05	0.814
Data-driven Decision-Making Culture	05	0.781
Organizational Communication Effectiveness	05	0.730

The reliability analysis of the study variables indicates satisfactory internal consistency for all constructs measured. HR Analytics, comprising five items, demonstrated a strong reliability score with a Cronbach's Alpha of 0.814, suggesting a high level of internal consistency. The data-driven decision-making culture also showed good reliability, with a Cronbach's Alpha of 0.781 across five items. Lastly, Organizational Communication Effectiveness, measured with five items, yielded a Cronbach's Alpha of 0.730, indicating acceptable reliability. These values confirm that the items used to assess each construct are consistent and reliable for further analysis.

Data Analysis Techniques

The accumulated data is analyzed using SPSS (Statistical Package for the Social Sciences), with a particular emphasis on conducting a mediation analysis. The Andrew Hayes plugin for SPSS is applied to mediate analysis to investigate the indirect effects that HR Analytics has on organizational communication effectiveness through the mediator of a data-driven decision-making culture.

Ethical Considerations

In this research, ethical considerations are of paramount importance. The following moral guidelines are adhered to:

- **Informed Consent:** Prior to participation, all participants receive comprehensive information regarding the study's nature, goal, and effects. Every participant gives their consent, ensuring that they have willingly chosen to participate in the study.
- **Confidentiality:** All information gathered from participants is kept private. Responses are used exclusively for this study, and personal identifiers are eliminated.
- **Right to Withdraw:** Participants are informed that there are no consequences if they decide to leave the study at any point.
- **Data Integrity:** The study reports findings in accordance with the strictest guidelines for accuracy and integrity, making sure that no data manipulation takes place.

FINDINGS

Demographic Analysis: Demographic analysis and other qualitative data are used to determine the makeup of the sample, which includes variables like gender, age, education level, industry type, and years of experience. The following findings are presented using descriptive statistics (frequencies, means, and standard deviations).

Table 2: Demographic Analysis

Category	Subcategory	Frequency	Percent
Age	18–25	40	25.0%
	26–35	88	55.0%
	36 and above	32	20.0%
	Total	160	100.0%
Gender	Male	104	65.0%
	Female	56	35.0%
	Total	160	100.0%
Education	Intermediate	16	10.0%
	Graduation or Higher	144	90.0%
	Total	160	100.0%
Job Level	Entry	32	20.0%
	Middle	64	40.0%
	Senior	64	40.0%
	Total	160	100.0%

The demographic profile of the respondents indicates that the majority (55%) fall within the 26–35 age group, followed by 25% aged 18–25 years, and 20% aged 36 and above. In terms of gender, 65% of the respondents are male, while 35% are female. Regarding education, a significant majority (90%) have completed graduation or higher education, while 10% hold an intermediate qualification. When analyzing job levels, respondents are evenly split between middle and senior levels, each constituting 40%, while 20% are at the entry level.

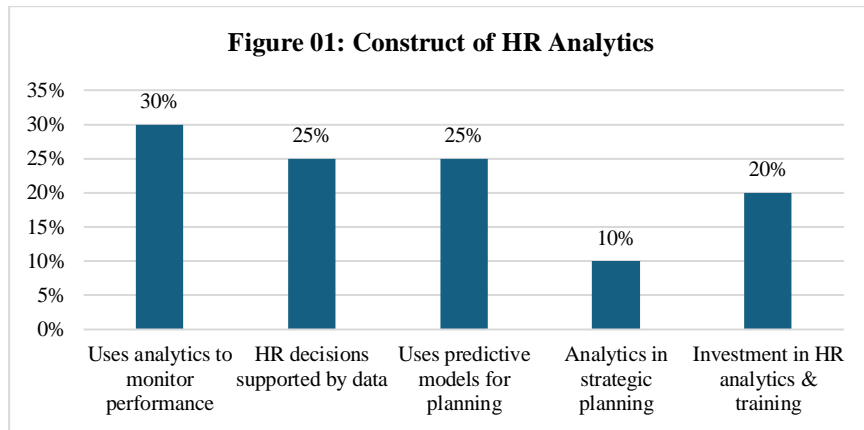


Figure 01 presents the extent to which HR analytics is utilized within organizations, based on affirmative responses. The highest percentage (30%) of organizations reported using analytics to monitor employee performance. This is followed by 25% each who indicated that data supports their HR decisions and that they use predictive models for planning. A smaller portion (20%) of organizations have invested in HR analytics and related training. Notably, only 10% reported using analytics for strategic planning purposes. Overall, while performance monitoring and data-supported decisions are common, strategic use and investment in HR analytics remain limited.

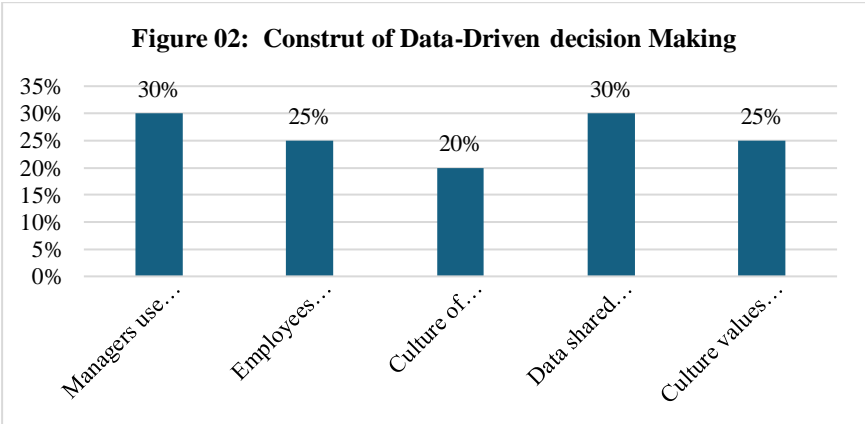


Figure 02 illustrates the presence of a data-driven decision-making culture within organizations. The highest proportion (30%) of respondents indicated that managers rely on data rather than intuition and that data is shared across departments, suggesting an emphasis on informed decision-making and interdepartmental collaboration. Additionally, 25% of organizations reported encouraging employees to use analytics and valuing transparency and analytics as part of their culture. However, only 20% of respondents acknowledged a broader culture of evidence-based decision-making, indicating that while certain elements of a data-driven culture are present, a fully embedded evidence-based approach may still be in the development stage.

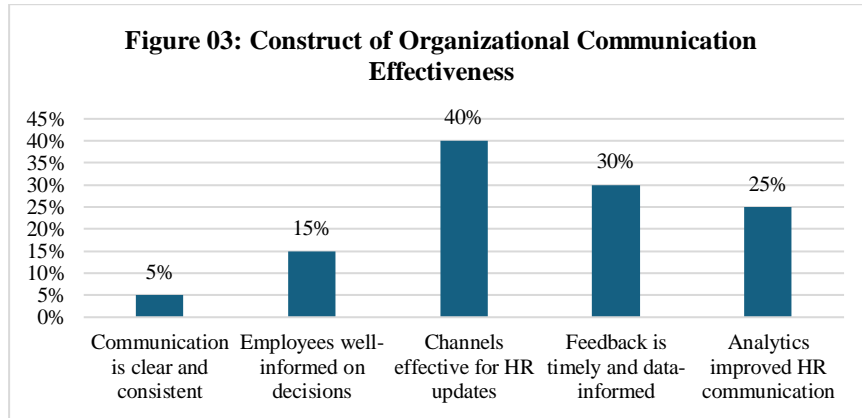


Figure 03 illustrates perceptions of organizational communication effectiveness. The highest percentage (40%) of respondents indicated that communication channels are effective for delivering HR updates. This is followed by 30% who agreed that feedback provided within the organization is timely and supported by data. Additionally, 25% believe that analytics has improved HR communication. However, only 15% of respondents felt that employees are well-informed about organizational decisions, and a mere 5% agreed that communication is clear and consistent. These results suggest that while specific tools and feedback processes are seen as effective, broader issues with clarity and consistency in communication persist.

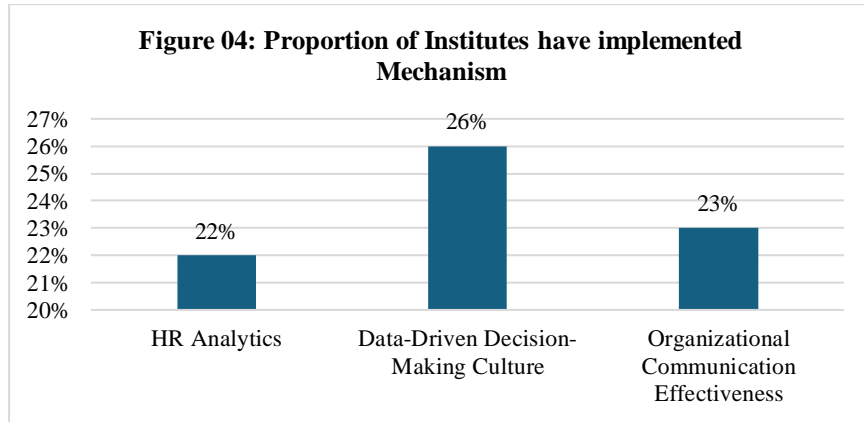


Figure 04 illustrates the percentage of institutions that have implemented mechanisms. It reveals that 26% of institutions have such mechanisms in place for fostering a data-driven decision-making culture, making it the highest among the three. Following this, 23% of institutions have these mechanisms in place for effective organizational communication. Lastly, HR analytics shows the lowest percentage, with 22% of institutions having implemented mechanisms to determine and document the impact in this area.

Regression Analyses using SPSS Andrew Hayes Plugin

Table 3: Total Effect Model (X → Y without Mediator)

Model Summary						
R	R ²	MSE	F	df1	df2	p
0.45	0.21	0.37	41.15	1	158	0.00
Coefficients						
Variable	Coeff	SE	t	p	LLCI	ULCI
Constant	2.24	0.17	13.06	0.00	1.90	2.58
HR Analytics	0.34	0.05	6.41	0.00	0.24	0.45

Table 3 presents the total effect of HR Analytics on Organizational Communication Effectiveness without considering any mediating variable. The model summary shows a correlation coefficient (R) of 0.45 and an R² value of 0.21, indicating that HR Analytics explains 21% of the variance in communication effectiveness. The F-statistic of 41.15 with a significance level (p = 0.00) confirms that the model is statistically significant. The coefficient for HR Analytics is 0.34 with a standard error of 0.05 and a highly significant t-value of 6.41 (p = 0.00), suggesting a strong and positive relationship between HR Analytics and communication effectiveness. The 95% confidence interval (0.24 to 0.45) does not include zero, further supporting the reliability of this effect.

Table 4: Direct, Indirect, and Total Effects of X (HR Analytics) on Y (Organizational Communication)

Total Effect					
Effect	SE	t	p	LLCI	ULCI
0.34	0.05	6.41	0.00	0.24	0.45
Direct Effect					
Effect	SE	t	P	LLCI	ULCI
0.31	0.05	5.86	0.00	0.21	0.42
Indirect Effect (via DDA2)					
Mediator		Effect	BootSE	BootLLCI	BootULCI
Data-Driven Making	Decision	0.03	0.03	-0.01	0.09
Confidence level: 95%					
Bootstrap samples: 5000					

Table 4 breaks down the total, direct, and indirect effects of HR Analytics on communication effectiveness, with Data-Driven Decision Making (DDA2) as the mediating variable. The total effect remains at 0.34 (SE =

0.05, $p = 0.00$), consistent with the results in Table 03. The direct effect, controlling for the mediator, is slightly reduced to 0.31, still significant with a p -value of 0.00 and a confidence interval ranging from 0.21 to 0.42. The indirect effect through data-driven decision making is 0.03, but the confidence interval (-0.01 to 0.09) includes zero, suggesting that the mediating effect is not statistically significant. This implies that while HR Analytics positively influences communication, the indirect pathway through a data-driven culture does not significantly alter that effect.

DISCUSSION

The findings of this study lend empirical legitimacy to the hypothesized relationships between HR Analytics, a data-driven decision-making culture, and organizational communication effectiveness. The results confirm that the role of HR Analytics is crucial in improving the comprehensiveness of organizational communication. **H1** was supported, as HR analytics revealed a significant direct effect on Organizational Communication Effectiveness ($\beta = 0.34$, $p < 0.001$), indicating that organizations that apply analytics in HR areas are more productive in terms of their internal communication systems. This is very much in line with the latest paper, where the greater role of data-driven HR practices is underscored in terms of smooth information flow, feedback channels, and degree of department alignment (Margherita & Braccini, 2023).

Concerning H2, the findings demonstrated that HR Analytics has a significant impact on the establishment of a Data-Driven Decision-Making Culture (beta = 0.16, $p = 0.01$), which supports the position that the injection of analytics into HR makes the general dependence on data in

making decisions more characteristic of an organization. This makes us think of what Minbaeva (2021) notes, stating that HR analytics can not only help enhance the operational efficiency of the company but also foster the culture of decision-making within the company based on evidence rather than intuition.

H3 was also supported by a notable correlation between a data-driven decision-making culture and organizational communication effectiveness ($\beta = 0.19$, $p = 0.01$). This finding suggests that when organizations prioritize data-driven decision-making, it has a positive impact on how information is shared and disseminated across various levels of the organization. According to McIver et al. (2018), such cultures facilitate transparency and enhance the timeliness of organizational communication, which, in turn, strengthens the important role of data culture in communication dynamics.

However, **H4** received only partial support. The indirect impact of HR Analytics on communication effectiveness, through a data-driven culture, had a positive effect (effect = 0.03). However, it was not statistically significant, as the confidence interval included zero (BootLLCI = -0.01, BootULCI = 0.09). This means that although a data-driven culture promotes communication effectiveness, it does not mediate the relationship between HR Analytics and communication in this sample very strongly. These findings suggest that the direct effect of HR Analytics on communication may be greater than its indirect influence, due to the immediate feedback systems and real-time data sharing mechanisms discussed by van den Heuvel and Bondarouk (2021).

In line with McIver et al. (2018), who discovered that incorporating analytics into HR functions improves communication transparency, feedback loops, and responsiveness, the results of this study support the positive and significant impact of HR analytics on organizational communication effectiveness. As Minbaeva (2021) pointed out, the advantages of data literacy and analytical tools in achieving improved operational efficiency and systematic communication, another illustration in the study is that HR analytics facilitates the development of a data-based decision-making culture. Moreover, the close association of the success of communication and data-driven culture proves the idea articulated by Bondarouk et al. (2017), who suggested that data-based cultures enhance credibility, clarity and cooperation of messages in companies.

However, contrary to the prediction, the mediating effect of a data-driven culture on the connection between HR analytics and communication efficacy is nonexistent. This result is contrary to those of Giermindl et al. (2022), who stated that, despite the benefits analytics can bring to the organizational culture, the complete potential of analytics in the communication process can be undermined by cultural reluctance or the absence of integration between departments. A reasonable case is the contextual limitations of the study, since the corporate sector of Karachi may be in the process of adopting analytics into its day-to-day workflow of communication and adopting more established data infrastructure systems. Culture might not be as important or could take more time to become an intervening power in the emerging markets, where enterprises might not be at all similar in their adoption of technology and data openness.

In recent studies, Margherita and Braccini (2023) allege that analytic adsorption needs not just the technical aspect of knowledge but rather the organizational readiness and the leadership commitment that may also come to play in the overall mediation outcome discussed in this paper. Collectively, these results point towards the necessity of conducting additional studies to explore alternative mediators, such as leadership style, digital readiness, or change management strategies, to better understand how HR analytics influence communication outcomes across different organizations.

The study identifies the impact of HR Analytics on the decision-making and communication of organizations. It implies that although creating a data-driven culture is advantageous, the practical application of analytics in HR functions may bring more rapid and measurable improvements in communication effectiveness.

Because of the results of the research study, the best theoretical complex that can be used in explaining these findings is the combination of the Resource-Based View of the corporation (RBV) and the Socio-Technical Systems (STS) theories. The RBV makes HR Analytics a strategic tool by delivering prompt, precise, and usable information that enhances the efficacy of communications and provides competitors with an advantage (Barney, 1991; Margherita & Braccini, 2023). Meanwhile, STS focuses on synergy between social dimensions (decision-making culture) and technical systems (HR analytics tools), emphasizing that when both systems work in harmony, effectiveness is achieved (Trist & Bamforth, 1951; van den Heuvel & Bondarouk, 2021). This two-theory view is justified by the findings of the study that HR analytics affects

communication more directly than through its mediating culture. Analytics is a valuable resource (RBV), but its transformative potential is only fully realized when it is integrated into adaptive social systems (STS).

CONCLUSION

The purpose of this study was to investigate the impact of HR analytics use on organizational communication effectiveness in Karachi's corporate sector and to explore the mediating role of a data-driven decision-making culture. The evidence presented supports a direct relationship between HR analytics and the impact of communication within a firm. Importantly, the analysis revealed that HR analytics have a statistically significant positive effect on enhancing internal communication ($\beta = 0.34, p < 0.01$), thereby confirming the hypothesis that organizations that utilize data in their HR processes tend to also have better communication channels and practices. Additionally, HR analytics was found to play a significant role in advancing the culture of data-driven decision-making (beta = 0.16, $p = 0.01$). The latter was also positively associated with better communication effectiveness (beta = 0.19, $p = 0.01$). Such conclusions underscore the importance of incorporating data literacy and analytical thinking at the micro level into the organizational culture to enhance communication processes.

However, the study also found that the mediating effect of a data-driven decision-making culture on the relationship between HR analytics and communication effectiveness was statistically insignificant (indirect effect = 0.03, BootLLCI = -0.01, BootULCI = 0.09). This means that, although HR analytics and a data-driven culture are associated with communication

effectiveness in their own way, the culture itself does not play a strong mediating role in their relationship.

Recommendations

Organizations are encouraged to invest in HR analytics tools and training to enhance internal communication strategies and improve overall organizational performance. As HR Analytics is an immediate improvement for communication effectiveness, firms should incorporate analytics into the day-to-day operations of their HR departments; these would include performance management, feedback systems, and workforce planning. Furthermore, there is a need to develop a culture that promotes data-driven decision-making to enhance the clarity and timeliness of communication, thereby reducing errors in the development process. Policymakers and HR leaders should collaborate on a concerted effort to develop data literacy and analytical capabilities across departments, promoting cross-departmental designs.

Limitations of the Study

This study employed a cross-sectional design and sampled only 160 respondents, thereby limiting the study to specific organizational contexts or industries. The use of self-reported data is prone to biases, such as social desirability or subjective interpretation. Additionally, the mediation effect of Data-Driven Decision-Making Culture is statistically weak, suggesting the need to explore other mediating variables or conduct longitudinal studies to examine causal relationships over time.

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APPENDIX

Survey Questionnaire

Impact of HR Analytics Utilization on Organizational Communication Effectiveness

Demographics

Age	<ol style="list-style-type: none"> 1. 18-25 2. 26-35 3. 36 and above
Gender	<ol style="list-style-type: none"> 1. Male 2. Female
Education	<ol style="list-style-type: none"> 1. Matric or Below 2. Intermediate 3. Graduation or Higher
Job Level	<ol style="list-style-type: none"> 1. Entry 2. Middle 3. Senior

HR Analytics Utilization (IV)

Code	Item	SDA	DA	N	A	SA
HA1	Our HR department uses analytics tools to monitor workforce performance.					

HA2	HR decisions in our organization are supported by data analysis.					
HA3	We use predictive models for workforce planning.					
HA4	HR analytics is integrated into our strategic planning.					
HA5	The organization invests in HR analytics software and training.					

Data-Driven Decision-Making Culture (MV)

Code	Item	SDA	DA	N	A	SA
DC1	Managers tend to prefer using data over intuition in their decision-making.					
DC2	Employees are encouraged to use analytics in their roles.					
DC3	There is a culture of evidence-based decision-making.					
DC4	Data insights are regularly shared across departments.					
DC5	Our organizational culture values transparency and analytics.					

Organizational Communication Effectiveness (DV)

Code	Item	SDA	DA	N	A	SA
CE1	Communication in our organization is clear and consistent.					
CE2	Employees are well-informed about organizational decisions.					
CE3	Effective communication channels are crucial for delivering HR updates.					

CE4	Feedback mechanisms are timely and data-informed.					
CE5	Analytics has improved the effectiveness of HR communication.					

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