

A Multivariate Statistical Model for Analyzing Dimensions of Administrative Communication and Classifying Job Performance: A Case Study of Unaizah Private College in Qassim – 2025

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ABSTRACT

This study aimed to develop a multivariate statistical model to understand the relationship between dimensions of administrative communication and patterns of job performance among employees at Unaizah Private College in Qassim. The research applied exploratory factor analysis to extract the underlying dimensions of administrative communication and cluster analysis to classify employees into homogeneous groups based on performance. The analytical descriptive method was employed, and the questionnaire was used as the main data collection tool, with a sample size of 90 individuals. Several hypotheses were tested, including the main hypothesis which stated that there is a statistically significant relationship between the dimensions of administrative communication and job performance levels at Unaizah Private College. The results revealed four main dimensions of administrative communication, and two distinct groups of employees based on performance patterns. The study recommended the use of factor analysis to identify the underlying dimensions of administrative communication, and cluster analysis as a method for analyzing employee patterns and redistributing tasks.

Keywords: Administrative Communication, Job Performance, Factor Analysis, Cluster Analysis, Multivariate Analysis.

Introduction:

Administrative communication is considered one of the fundamental elements for institutional success and goal achievement. This type of communication contributes to enhancing interaction among various managerial levels, supports decision-making processes, and guides individual behavior in the work environment. On the other hand, job performance is one of the most prominent indicators of institutional efficiency, as it reflects the employee's commitment and competence in fulfilling their tasks. The aim of this research is to present a multivariate statistical model to analyze the dimensions of administrative communication and classify job performance by applying both factor analysis and cluster analysis to process field data. Unaizah Private College in Qassim was chosen as the field of application for the study in 2025.

Research Problem:

High-quality job performance is a primary goal for all institutions, and it can only be achieved through effective and fruitful administrative communication among all parties in the administrative process. The main research problem can be framed as follows:

Is it possible to build a statistical model that explains the relationship between the dimensions of administrative communication and patterns of job performance among employees at Unaizah Private Colleges in Qassim?

From this central question, the following sub-questions emerge:

- What are the underlying dimensions of administrative communication among employees at Unaizah Private College?
- How can employees at Unaizah Private College be classified into homogeneous groups based on these dimensions?

- Are there statistically significant differences in job performance patterns according to the dimensions of administrative communication?
- What is the relationship between patterns of administrative communication and levels of job performance?

Research Hypotheses:

- There are correlations between the dimensions of administrative communication among employees at Unaizah Private College.
- Employees can be classified into distinct job performance patterns based on the extracted dimensions of administrative communication.
- There is a statistically significant relationship between the extracted dimensions of administrative communication (using factor analysis) and job performance levels among employees at Unaizah Private Colleges.
- There are statistically significant differences in the average dimensions of administrative communication among different job performance groups (classified via cluster analysis).

Research Objectives:

This study primarily aims to:

- Build a multivariate statistical model that reveals the underlying dimensions of administrative communication.
- Apply cluster analysis to identify distinct groups of employees based on communication patterns and job performance.
- Determine the type of relationship between job performance and the extracted underlying dimensions of administrative communication.
- Explore the relationship between administrative communication patterns and levels of job performance.

Significance of the Study:

The scientific significance of this study lies in presenting a statistical model that contributes to improving the work environment by understanding the dimensions of administrative communication and linking them to actual employee performance, thereby supporting planning and administrative development processes at Unaizah Private College.

Practically, the study may help researchers understand the role that statistical models can play in explaining many relationships between multiple variables.

Study Methodology:

The study adopted the descriptive-analytical method.

Research Tools:

- **Primary Sources:** Represented by the questionnaire.
- **Secondary Sources:** Represented by scientific books, articles, theses, journals, official reports, and print and electronic publications related to the research topic.

Study Delimitations:

- **Subject Delimitation:** This research addresses the construction of a multivariate statistical model to analyze the dimensions of administrative communication and classify job performance: A case study of Unaizah Private College in Qassim – 2025.
- **Human Delimitation:** Employees at Unaizah Private College in Qassim across different administrative levels, with the sample selected using a simple random sampling method.
- **Spatial Delimitation:** Unaizah Private College in Qassim, Kingdom of Saudi Arabia.
- **Time Delimitation:** The year 2025.

Definition of Terms:

- **Administrative Communication:** *"The process of exchanging information and ideas among individuals within an organization with the aim of achieving organizational goals. It includes vertical, horizontal, and informal communication among various organizational levels."* (Robbins & Coulter, 2021)
- **Job Performance:** *"A measure of an employee's ability to accomplish the tasks required of them according to standards set by the organization. It depends on their efficiency at work and quality in achieving the prescribed goals."* (Campbell, 1990)
- **Factor Analysis:** *"A statistical technique used to extract latent dimensions or fundamental factors from a large set of variables in order to simplify the data and analyze relationships among them."* (Hair, Black, Babin, & Anderson, 2019)
- **Cluster Analysis:** *"A statistical technique used to classify individuals or objects into homogeneous groups based on shared characteristics or traits, aiming to discover patterns or categories within the data."* (Ketchen & Shook, 1996)
- **Multivariate Analysis:** *"A set of statistical methods used to study the relationships between more than one variable at a time in order to understand the effect of independent variables on the dependent variable."* (Hair, Black, Babin, & Anderson, 2019)

Theoretical Framework and Previous Studies

Communication is the process of exchanging information, meanings, and ideas between two or more individuals, aiming to deliver new information to others, influence their behavior—whether individuals or groups—or change and direct such behavior in a way that strengthens and enhances social and human relations among individuals to achieve social or humanitarian goals.

Administrative Communication

Administrative communication is considered one of the fundamental pillars on which institutions rely to achieve their objectives. It is the process through which information and opinions are exchanged between various levels of management. Effective communication contributes to enhancing coordination and integration among employees and different departments.

Al-Zaid (2019) defined it as:

“An organized process aimed at exchanging information between management and employees in a manner that contributes to achieving organizational efficiency and effectiveness” (Al-Zaid, 2019, p. 45).

a. Language of Administrative Communication

The language of administrative communication refers to the verbal or non-verbal means used to convey ideas and instructions within the workplace. It includes formal written language such as correspondence and reports, as well as oral language such as meetings and conversations (Al-Mousa, 2017).

b. Administrative Communication Environment

This refers to the organizational and social framework within which information is exchanged inside the institution, influenced by organizational culture, leadership styles, and organizational structure (Al-Suwailim, 2018).

c. Administrative Communication Agents

They are the individuals or entities responsible for implementing communication processes within the institution, such as managers, department heads, and HR officers. They are tasked with conveying policies, directives, and

information (Al-Yahya, 2016).

d. Means of Administrative Communication

These include tools used to transmit administrative messages such as email, meetings, phone calls, internal newsletters, and official reports. The medium is chosen according to the nature of the message and the administrative level (Al-Ajmi, 2017).

Concept of Job Performance

Defining job performance precisely is challenging due to the variable attributes it encompasses. Sometimes it reflects an organization's ability to allocate and utilize its resources optimally; other times it relates to worker productivity or is equated with productivity itself. One definition states:

"Performance refers to the degree of achievement and fulfillment of organizational goals and reflects the manner in which an employee meets job requirements. It also refers to the outputs or goals that the system seeks to achieve."

This concept links activity aspects with the organization's goals by maximizing outputs while minimizing inputs (Hasan Balout, 2002).

Job performance refers to the level of execution by an employee of the tasks and responsibilities assigned to them according to specific standards. It is a key indicator of employee efficiency and their contribution to achieving institutional goals.

Al-Enezi (2020) defined it as:

"The extent to which an employee commits to performing their job duties efficiently and with quality within the specified time frame, thereby achieving the desired institutional goals" (Al-Enzi, 2020, p. 67).

Multivariate Analysis

Multivariate Analysis is a set of statistical methods used to study more than one dependent and independent variable simultaneously in order to understand the complex structure of their interrelationships. It is used when the dataset contains several correlated variables, aiming to simplify them, discover hidden patterns, classify cases, or test advanced statistical hypotheses.

Key methods under this category include:

- Factor Analysis
- Cluster Analysis
- Discriminant Analysis
- Multiple Regression
- Principal Component Analysis

Salman (2016) explained: "Multivariate analysis is a statistical approach based on examining relationships between several variables at the same time using quantitative techniques. It is an effective tool for understanding the internal structure of data, especially when a single variable is insufficient to explain the studied phenomenon" (Salman, 2016, p. 59).

Factor Analysis

Factor analysis is one of the multivariate statistical techniques used to discover underlying structures among a group of variables. It aims to reduce the number of variables to a smaller set of factors representing the underlying concepts in the data.

Al-Ghamdi (2018) defined it as: "A statistical method aimed at uncovering the factors that explain the common correlations between variables by reducing them into a set of dimensions" (Al-Ghamdi, 2018, p. 122).

Principal Component Method

The Principal Component Method is one of the most commonly used techniques in exploratory factor analysis. It aims to reduce the number of original variables into fewer components that retain the maximum possible variance in the data.

This method relies on variance analysis rather than shared variance alone, making it suitable for identifying the main dimensions underlying the data.

Al-Ghamdi (2018) explained: "The principal component method seeks to transform a set of correlated variables into a new set of uncorrelated components that can be used to explain as much variance as possible in the original data" (Al-Ghamdi, 2018, p. 135).

Cluster Analysis

Cluster analysis is used to divide individuals or items into homogeneous groups based on specific characteristics or traits. It is an important tool in data classification.

Al-Shammari (2017) defined it as: "A statistical method aimed at classifying elements into groups that are internally similar and externally different, based on distances or similarities between data points" (Al-Shammari, 2017, p. 88).

Overview of Unaizah Private Colleges

Unaizah Colleges began their academic journey in the 1436/1437 AH school year after obtaining general accreditation No. 6351 on 23/01/1437 AH. They represent a non-traditional educational beacon in Saudi Arabia's higher education landscape.

The colleges focus on educational, research, and community partnership pillars in their pursuit of leadership in private university education, guided by a comprehensive vision and a well-defined action plan aimed at transforming them into a model university grounded in education and scientific research.

Located in Unaizah, one of the oldest and most important governorates in the Qassim region, the colleges include:

- College of Engineering and Information Technology
- College of Humanities and Administrative Studies

These colleges offer carefully selected academic programs aligned with Saudi Vision 2030 and the needs of the public and private sectors, while avoiding duplication with other local universities.

The colleges began with 12 undergraduate programs and have steadily expanded to 13 programs, in addition to 4 postgraduate diploma and master's programs in collaboration with distinguished Saudi universities. This expansion has coincided with significant student enrollment growth:

- **1,423 male students**
- **701 female students**
- **Total graduates: 1,139**

The colleges continue to develop their infrastructure, administration, and technology, and are improving both the quantity and quality of their faculty and administrative staff. They also actively engage in community partnerships with prominent institutions to enhance their educational, research, and service outputs.

These efforts have led to several accomplishments, most recently **obtaining institutional accreditation** from the Education and Training Evaluation Commission during this academic year.

Previous Studies:

Study by Mohammed Abdullah Al-Enzi (2010):

This research aimed to understand the impact of administrative communication on making effective administrative decisions. It reached several findings and recommendations, the most important of which is that administrative communication skills have a significant influence on providing accurate and clear information, which affects the effectiveness of communication in the academic environment. The study recommended increasing focus on developing administrative communication and training employees on using modern communication tools.

Study by Musab Ismail Tabash (2008):

This research aimed to identify the role played by administrative communication systems and technologies in serving decision-makers in the Ministry of Education in the Gaza Strip. The results revealed several obstacles limiting the use of communication technologies in decision-making, most notably those related to communication technology, followed by personal barriers, then organizational obstacles. The study recommended spreading technological awareness among employees and utilizing available technologies to facilitate communication processes.

Study by Chen et al. (2018):

This study aimed to understand the relationship between administrative communication and job performance using cluster analysis, where employees were classified based on their performance and level of communication within the institution. The results showed that effective communication can improve employee performance and lead to higher productivity levels.

Study by Al-Zahrani (2021):

This study aimed to examine the impact of administrative communication on job commitment in healthcare institutions. It found that improving administrative communication had a positive effect on enhancing employee commitment and work quality.

Study by Campbell (1990):

This research analyzed job performance in industrial and organizational contexts, focusing on identifying the factors influencing performance across a set of variables such as skills, knowledge, and abilities. Factor analysis was used to extract the factors affecting performance.

Commentary on Previous Studies:

Similarity:

Most of the previous studies share a common interest in examining the relationship between administrative communication and job performance. In studies like Campbell (1990) and Chen et al. (2018), statistical tools such as factor analysis and cluster analysis were used to investigate the variables influencing performance. In contrast, studies by Mohammed Abdullah Al-Enezi (2010), Musab Ismail Tabash (2008), and Al-Zahrani (2021) focused on how different types of administrative communication affect job performance and the role of administrative communication systems in aiding decision-making.

Difference:

The main difference between these previous studies and the current study lies in context and field. While some studies focused on industrial and healthcare institutions, the current study investigates a specific case at Unaizah Private College in Al-Qassim, adding an academic dimension to the research. Furthermore, this study uniquely integrates both factor analysis and cluster analysis to deeply analyze the dimensions of administrative communication and classify patterns of job performance.

Research Gaps and Innovation in the Current Study:

Despite the presence of several studies addressing the relationship between administrative communication and job performance, there is a gap in the literature concerning the application of multivariate statistical methods (factor analysis and cluster analysis) in academic settings, particularly in university colleges. This study focuses on providing a statistical model to analyze the dimensions of administrative communication and classify patterns of job performance using field data collected from employees at Unaizah Private College.

METHODOLOGICAL FRAMEWORK AND FIELD STUDY

First: Research Methodology

This study adopts a quantitative descriptive-analytical approach to examine the dimensions of administrative communication and classify job performance at Unaizah Private College.

The study is primarily based on quantitative analysis; however, it acknowledges the potential value of methodological triangulation. In this context, descriptive methods were used to analyze the current status of administrative communication, while the deductive approach was employed to support the theoretical framework and guide hypothesis development. The historical perspective was briefly considered to contextualize the evolution of administrative communication concepts.

Data were collected from a sample of employees at Unaizah Private College across different administrative levels and analyzed using multivariate statistical techniques, particularly factor analysis and cluster analysis.

This methodological framework aims to identify the underlying dimensions of administrative communication and classify patterns of job performance based on the extracted factors.

Second: Study Instrument

A questionnaire was designed consisting of two main parts:

- **Part One:** Focuses on measuring the dimensions of administrative communication and contains (16) statements evaluating the availability and effectiveness of administrative communication dimensions.
- **Part Two:** Measures job performance through (5) statements that assess the employee's level of performance efficiency and commitment.

Five-Point Likert Scale and Weighted Mean:

The researcher used the five-point Likert scale consisting of five options (Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree) according to the weights shown in the table below. The weighted average was then calculated, as illustrated in the second column. It is worth noting that the length of the period used is $\frac{4}{5}$, approximately 0.80. This interval was calculated based on the presence of 4 spaces between the numbers 1, 2, 3, 4, and 5.

Five-Point Likert Scale and Weighted Average Table

Table (1)

Response Option	Weight	Weighted Average Range	Interpretation
Strongly Agree	5	4.21 – 5.00	Very High
Agree	4	3.41 – 4.20	High
Neutral	3	2.61 – 3.40	Moderate
Disagree	2	1.81 – 2.60	Low
Strongly Disagree	1	1.00 – 1.80	Very Low

Source: Prepared by the researcher (from questionnaire data – 2025)

Third: Field Study Steps

Study Population:

The study population consisted of employees at Unaizah Private College in various job positions. A probability sample was selected using the simple random sampling method based on Morgan's table, with a total sample size of (95) individuals.

Data Collection:

The questionnaire was distributed electronically via email and also through sharing the link on social media platforms with the staff of Unaizah Private College. A total of (90) valid responses were retrieved and used for analysis.

Application of the Study Tool:

Cronbach's Alpha Coefficient was used to assess the reliability of the study concepts, i.e., if another researcher were to conduct the same study, they would reach the same results. It also measures the internal consistency among the variables and the reliability of the results.

Validity and Reliability of the Study Instrument:

Reliability:

Reliability was assessed using Cronbach's Alpha coefficient to measure internal consistency.

The results showed high reliability levels across all dimensions:

- Administrative Communication: 0.91
- Job Performance: 0.89
- Overall Instrument: 0.90

All values exceed the acceptable threshold of 0.70, indicating strong internal consistency and reliability of the instrument.

Cronbach's Alpha Coefficient for the Questionnaire Dimensions

Table (2)

Cronbach's Alpha	No. of Items	Dimension Title
0.91	16	Administrative Communication
0.89	5	Job Performance
0.90	21	All Questionnaire Items

Source: Prepared by the researcher (from questionnaire data – 2025)

Construct Validity

Construct validity was examined using Exploratory Factor Analysis (EFA). Prior to conducting factor analysis, the suitability of the data was tested using the Kaiser-Meyer-Olkin (KMO) measure and Bartlett's Test of Sphericity.

The KMO value reached (0.825), indicating a high level of sampling adequacy. Bartlett's Test was statistically significant ($\chi^2 = 855.356$, $df = 120$, $p < 0.001$), confirming that the correlation matrix is not an identity matrix and that the data is appropriate for factor analysis.

These results support the suitability of applying factor analysis and confirm the construct validity of the

instrument.

First: Factor Analysis of Administrative Communication Dimensions

Sample Adequacy (KMO) and Bartlett's Test:

KMO and Bartlett's Test

Table (3)

Test Name	Value
Kaiser-Meyer-Olkin Measure	0.8250
Bartlett's Test of Sphericity	
Approx. Chi-Square	855.356
df	120
Sig.	0.000

Source: Prepared by the researcher from questionnaire data – 2025

Communality Values for Variables Before Rotation:

Table (4)

Communalities		
Variable	Initial	Extraction
The language used in administrative communication is clear and easy to understand.	1.000	0.6570
The college uses appropriate formal language in all forms of administrative communication.	1.000	0.7230
The terminology used is precise and not open to misinterpretation.	1.000	0.8300
Technical concepts and terms are simplified for easier understanding by employees.	1.000	0.7420
Those in charge of communication at the college have good communication skills.	1.000	0.5250
Communication officers interact with employees politely and respectfully.	1.000	0.6580
They can explain information clearly.	1.000	0.7120
They pay attention to employees' feedback and opinions.	1.000	0.7730
The institution opens communication channels between staff and management.	1.000	0.6580
Communication problems are addressed seriously and promptly.	1.000	0.7270
There is an atmosphere of cooperation and understanding between staff and management.	1.000	0.5980
The culture of dialogue and continuous communication is promoted.	1.000	0.6570
The college provides effective communication methods such as email and regular meetings.	1.000	0.7750
The college uses modern communication tools like apps to enhance administrative communication.	1.000	0.7650
Communication methods are selected based on the nature of the information to be conveyed.	1.000	0.6790
Communication tools help reduce errors and misunderstandings in the work environment.	1.000	0.7800

Extraction Method: Principal Component Analysis

Source: Prepared by the researcher from questionnaire data – 2025

The table shows the communalities of the variables under the proposed solution before factor rotation. The communality of a variable is the squared multiple correlation between that variable and all factors, representing the proportion of variance explained by the extracted factors. For example:

- 83% of the variance in the variable "terminology is precise and not open to misinterpretation" is shared with the common factors.
- 78% of the variance in the variable "communication tools help reduce errors and misunderstandings" is also shared with the extracted factors.

In conclusion, since no communality is less than 0.50, these variables reasonably explain the total variance and are thus valid for analysis.

Initial Eigenvalues and Total Variance Explained (Before and After Rotation):

Table (5)

Total Variance Explained									
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.956	43.476	43.476	6.956	43.476	43.476	4.112	25.702	25.702
2	1.876	11.727	55.203	1.876	11.727	55.203	2.717	16.979	42.681
3	1.321	8.255	63.458	1.321	8.255	63.458	2.373	14.831	57.512
4	1.104	6.900	70.358	1.104	6.900	70.358	2.055	12.846	70.358
5	.8280	5.176	75.535						
6	.7630	4.766	80.301						
7	.6360	3.974	84.275						
8	.5260	3.287	87.562						
9	.3970	2.482	90.044						
10	.3530	2.203	92.247						
11	.3040	1.900	94.147						
12	.2780	1.736	95.883						
13	.2080	1.297	97.181						
14	.1730	1.080	98.260						
15	.1510	.9450	99.205						
16	.1270	.7950	100.000						
Extraction Method: Principal Component Analysis									

Extraction Method: Principal Component Analysis

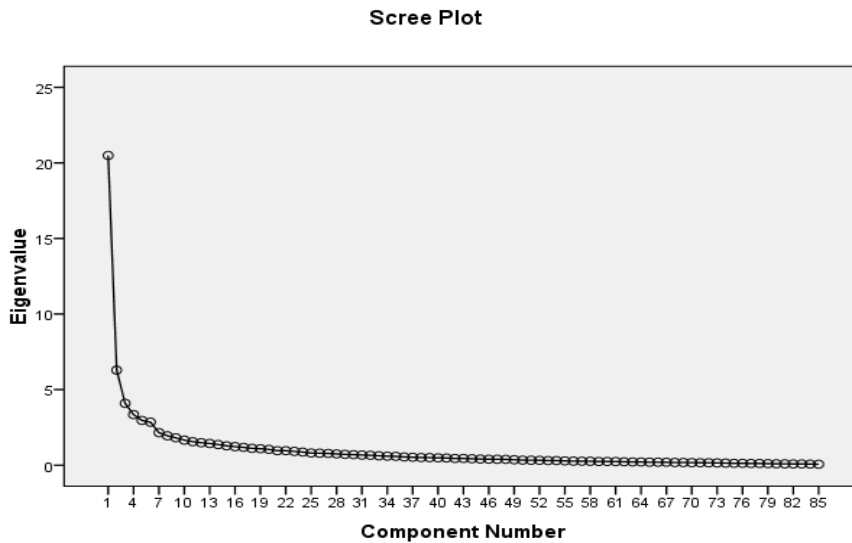
Source: Prepared by the researcher from questionnaire data – 2025

From the table above:

- The table provides estimates of statistical measures related to the extracted components.
- The first section shows initial eigenvalues from the correlation matrix. Factors with eigenvalues less than 1 are excluded. For instance, the eigenvalue of factor 1 is 6.956, and since total variance = number of variables = 16, the variance explained by factor 1 = $(6.956 / 16) = 43.476\%$.
- Only four factors have eigenvalues greater than 1, collectively explaining 70.358% of the total variance.
- The second section shows the sum of squared loadings for extracted factors before rotation.
- The third section shows the same after rotation using the Varimax method. The variances explained are redistributed more evenly across factors.

Imaginary Roots of the Extracted Factors:

Figure No. (1)



Source: Prepared by the researcher from questionnaire data – 2025

The figure above presents a scree plot of the imaginary roots (eigenvalues) for each extracted factor. It clearly illustrates that the amount of variance attributed to each factor (as represented by the eigenvalues) sharply declines with the extraction of successive factors. From the plot, it is evident that the "elbow" begins to appear between the fourth and fifth factor. Additionally, the fifth factor corresponds to an eigenvalue less than 1, and hence it is excluded. Therefore, only the first four factors are retained.

Component Matrix and Factor Loadings Before Rotation:

Table No. (6)

Component variable	1	2	3	4
The language used in administrative communication is clear and easy to understand.	.490	.414	.298	.396
The college uses appropriate formal language in all forms of administrative communication.	.640	.510	-.066	.222
The terminology used is precise and not open to misinterpretation.	.449	.768	.106	-.166
Technical concepts and terms are simplified for easier understanding by employees.	.384	.698	.207	-.253
Those in charge of communication at the college have good communication skills.	.568	-.219	.247	.306
Communication officers interact with employees politely and respectfully.	.567	-.194	.380	.393
They can explain information clearly.	.667	-.254	.387	-.229
They pay attention to employees' feedback and opinions.	.635	-.320	.346	-.383
The institution opens communication channels between staff and management.	.752	-.163	-.160	-.201
Communication problems are addressed seriously and promptly.	.836	-.026	-.119	-.115
There is an atmosphere of cooperation and understanding between staff and management.	.627	-.231	.384	-.063
The culture of dialogue and continuous communication is promoted.	.781	-.073	-.084	-.185

The college provides effective communication methods such as email and regular meetings.	.765	-.040	-.403	-.157
The college uses modern communication tools like apps to enhance administrative communication.	.741	-.026	-.462	.047
Communication methods are selected based on the nature of the information to be conveyed.	.773	-.040	-.281	.024
Communication tools help reduce errors and misunderstandings in the work environment.	.682	-.159	-.223	.490
Extraction Method: Principal Component Analysis.				
a. 4 components extracted.				

Source: Prepared by the researcher from questionnaire data – 2025

From the table above, the following can be observed:

The table above presents the Component Matrix, which includes the factor loadings for each of the sixteen variables on the four extracted components. When the components are orthogonal (i.e., uncorrelated), the factor loadings can be interpreted as correlation coefficients between the variables and the components. Therefore, the higher the absolute value of the loading (which cannot exceed 1), the greater the amount of total variance in the respective variable that is explained by the component.

It is evident that the factor analysis has extracted four components. Notably, Component 1 shows high loadings for many variables, followed by Components 2, 3, and 4, as shown in the table above.

The negative signs observed in the loadings of some variables indicate an inverse relationship between those variables and the respective component.

Rotated Component Matrix and Factor Loadings:

Table No. (7)

Component variable	1	2	3	4
The language used in administrative communication is clear and easy to understand.	.071	.056	.596	.542
The college uses appropriate formal language in all forms of administrative communication.	.433	-.038	.626	.378
The terminology used is precise and not open to misinterpretation.	.178	.062	.891	.008
Technical concepts and terms are simplified for easier understanding by employees.	.074	.161	.841	-.053
Those in charge of communication at the college have good communication skills.	.228	.360	-.006	.586
Communication officers interact with employees politely and respectfully.	.126	.384	.032	.702
They can explain information clearly.	.237	.773	.103	.220
They pay attention to employees' feedback and opinions.	.259	.836	.046	.067
The institution opens communication channels between staff and management.	.669	.440	.092	.087
Communication problems are addressed seriously and promptly.	.681	.409	.240	.197
There is an atmosphere of cooperation and understanding between staff and management.	.197	.659	.086	.342
The culture of dialogue and continuous communication is promoted.	.627	.456	.198	.131
The college provides effective communication methods such as email and regular meetings.	.835	.231	.150	.039

The college uses modern communication tools like apps to enhance administrative communication.	.844	.077	.111	.183
Communication methods are selected based on the nature of the information to be conveyed.	.743	.217	.151	.237
Communication tools help reduce errors and misunderstandings in the work environment.	.620	.022	-.042	.627
Extraction Method: Principal Component Analysis.				
Rotation Method: Varimax with Kaiser Normalization.				
Rotation converged in 7 iterations.				

Source: Prepared by the researcher from questionnaire data – 2025

From the table above, the following can be observed:

The table above presents the Rotated Component Matrix and the corresponding factor loadings after rotation. The purpose of rotation is not merely to change the number of extracted components, but rather to find a new orientation of the axes (components) that facilitates interpretation. The rotated component matrix is generally much easier to interpret compared to the unrotated matrix. Each of the four components was then interpreted in light of established administrative communication theory.

- Component 1, 'Administrative Communication Tools and Methods,' reflects the technological and procedural mechanisms used to enhance internal communication. This aligns with Robbins & Coulter (2021), who emphasized the importance of formal tools in maintaining organizational coherence.
- Component 2, 'Administrative Communication Personnel,' emphasizes human interaction and feedback responsiveness, as discussed by Al-Yahya (2016).
- Component 3, 'Administrative Communication Language,' is consistent with Al-Mousa (2017), who underscored the importance of clarity and simplicity in communication terminology.
- Component 4, 'Skills and Tools of Administrative Communication,' integrates communicative competence and technological aids, supporting the framework proposed by Al-Ghamdi (2018).

These theoretical linkages validate the extracted components and enhance the interpretive value of the factor analysis results.

Based on the four extracted components, they can be named as follows:

Component 1 includes six variables:

("The institution provides communication channels between employees and management,"

"Administrative communication problems are handled seriously and promptly,"

"The culture of dialogue and continuous communication is promoted within the institution,"

"The college offers effective communication methods such as emails and regular meetings,"

"The college uses modern communication technologies such as electronic applications to enhance administrative communication,"

"The appropriate communication method is determined based on the type of information to be conveyed").

This component can be named: **"Administrative Communication Tools and Methods."** Notably, this factor explains 43.476% of the total variance.

Component 2 includes three variables:

("Administrative communication personnel are able to clearly explain information,"

"They attentively listen to employee comments and suggestions,"

"A cooperative and understanding environment prevails between staff and management").

This component can be named: "**Administrative Communication Personnel.**"

It accounts for 11.727% of the total variance.

Component 3 includes four variables:

("The language used in administrative communication at Unaizah Private College is clear and easy to understand,"

"The college relies on appropriate formal language across all forms of administrative communication,"

"The terminology used is precise and not open to misinterpretation,"

"Technical terms and concepts are simplified to be more easily understood by employees").

This component can be named: "**Administrative Communication Language.**"

It explains 8.255% of the total variance.

Component 4 includes three variables:

("Administrative communication personnel possess good communication skills,"

"They interact with employees politely and respectfully,"

"The communication tools used help reduce errors and misunderstandings in the work environment").

This component can be named: "**Administrative Communication Skills and Tools.**"

It accounts for 6.900% of the total variance.

Based on the preceding analysis and the results obtained in this section—where four key components summarizing the dimensions of administrative communication were identified, it is possible to confirm the first hypothesis, which states that there are correlational relationships among the dimensions of administrative communication among employees at Unaizah Private College.

Items with factor loadings greater than 0.50 were retained, confirming that the extracted factors appropriately represent the underlying constructs.

Second: Cluster Analysis of Job Performance

Cluster analysis is a type of statistical method that groups variables into sets called clusters. A cluster is a group of relatively homogeneous cases, where the elements within each cluster are similar to one another and dissimilar from those in other clusters.

The K-Means method was used to divide individuals into groups based on their responses regarding job performance.

Two main clusters were identified, representing different patterns of job performance:

- **Cluster 1:** Very High Performance
- **Cluster 2:** High Performance

Table No. (8)

Clusters	Number of Cases
1	70
2	20

Source: Prepared by the researcher from questionnaire data – 2025

The table above shows the number of cases in each cluster, with 70 cases in the first cluster and 20 cases in the second cluster.

Table No. (9)

Variable	Cluster	
	1	2
Effective communication between management and employees helps increase productivity	5	4
Good communication contributes to reducing errors and improving performance quality	5	4
Administrative communication enhances employees' sense of belonging and job satisfaction	5	4
Effective communication helps improve coordination between different departments within the organization	5	4
Effective administrative communication enhances innovation and improves employees' problem-solving abilities	5	4

Source: Prepared by the researcher from the questionnaire data – 2025

From the above table titled Final Cluster Centers, the results showed that Cluster 1 represents individuals with very high performance across all dimensions, while Cluster 2 reflects high job performance.

Table No. (10)

Variable	Cluster		"F test value"	sig
	Mean Squares	df		
Effective communication between management and employees helps increase productivity	8.750	1	70.968	0.000
Good communication contributes to reducing errors and improving performance quality	6.717	1	83.595	0.000
Administrative communication enhances employees' sense of belonging and job satisfaction	18.096	1	221.393	0.000
Effective communication helps improve coordination between different departments within the organization	11.429	1	215.291	0.000
Effective administrative communication enhances innovation and improves employees' problem-solving abilities	12.801	1	144.024	0.000

Source: Prepared by the researcher from the questionnaire data – 2025

From the table above, titled "ANOVA Table," it is noted that the results of the Analysis of Variance (ANOVA)

indicate that all dimensions of job performance significantly contribute to the differentiation between the two clusters, as the significance level for all variables is less than (0.05). This strengthens the model's classification power.

Based on the above analysis and the results obtained in this section, in which the sample was classified into two main groups—where the first group represents employees with very high performance and the second group represents employees with high performance—it is possible to confirm the second hypothesis, which states that employees can be classified into distinct job performance patterns based on the extracted dimensions of administrative communication.

The Relationship Between Dimensions of Administrative Communication and Job Performance

Table No. (11)

Dimensions of Administrative Communication	Dependent Variable	Correlation Coefficient	sig
Means and Methods of Administrative Communication	Job Performance	0.369**	0.000
Administrative Communication Officers		0.276**	0.009
Language of Administrative Communication		0.207*	0.040
Skills and Tools of Administrative Communication		0.060	0.575
Overall Dimensions of Administrative Communication		0.251*	0.017

Source: Prepared by the researcher from the questionnaire data – 2025

*** Correlation is significant at the 0.05 level**

**** Correlation is significant at the 0.01 level**

From the above table, which shows the relationship between the extracted dimensions of administrative communication and job performance, it is observed that there is a statistically significant positive correlation between (Means and Methods of Administrative Communication, Administrative Communication Officers, and Language of Administrative Communication) and the improvement of job performance. It is also noted that there is no significant relationship between (Skills and Tools of Administrative Communication) and the improvement of job performance.

There is an overall positive correlation between the combined dimensions of administrative communication and job performance. This means that administrative communication, in its various dimensions, positively influences the enhancement of job performance.

Based on the previous analysis and the results obtained in this section — which investigated the relationship between the dimensions of administrative communication and job performance — the third hypothesis can be confirmed. This hypothesis states that:

There is a statistically significant relationship between the extracted dimensions of administrative communication (using factor analysis) and the levels of job performance among employees at Unaizah Private Colleges.

Differences in the Mean of Administrative Communication Dimensions Between Job Performance Groups

Table No. (12)

Dimensions of Administrative Communication	T-test Value	df	sig	Mean of Group 1	Mean of Group 2	Difference Between Means
Means and Methods of Administrative Communication	3.045	88	0.003	4.30	3.95	0.35
Administrative Communication Officers	2.249	88	0.028	4.36	4.10	0.26
Language of Administrative Communication	0.216	88	0.830	4.19	4.17	0.02

Skills and Tools of Administrative Communication	0.075	88	0.941	4.29	4.30	-0.01
Average of Administrative Communication Dimensions	1.921	88	0.049	4.29	4.13	0.16

Source: Prepared by the researcher from the questionnaire data – 2025

From the table above, which shows the differences in the means of administrative communication dimensions—obtained using factor analysis—according to the functional performance groups identified through cluster analysis, the following can be observed:

There are statistically significant differences between the means and methods of administrative communication and the functional performance groups. These differences are in favor of the first group, whose mean was 4.30, indicating very high performance, while the mean of the second group was 3.95, indicating high performance.

There are statistically significant differences between the administrative communication officers and the functional performance groups. These differences are also in favor of the first group, with a mean of 4.36 (very high performance) compared to 4.10 for the second group (high performance).

There are no statistically significant differences between the dimensions of (language of administrative communication and skills and tools of administrative communication) and the performance groups, as the p-values for both were greater than the significance level of 0.05.

Considering the T-test values and their associated p-values, which were less than 0.05 for some dimensions, the hypothesis stating that there are statistically significant differences in the means of administrative communication dimensions between the different functional performance groups (classified via cluster analysis) can be confirmed.

CONCLUSION: INCLUDING RESULTS AND RECOMMENDATIONS

First: Results:

1. There are latent dimensions of administrative communication among employees at Unaizah Private College, identified using factor analysis.
2. There are correlational relationships between the dimensions of administrative communication among employees at Unaizah Private College.
3. Cluster analysis can be used to classify employees into distinct functional performance patterns based on the extracted dimensions of administrative communication.
4. There is a statistically significant relationship between the extracted dimensions of administrative communication (using factor analysis) and the levels of job performance among employees at Unaizah Private College.
5. There are statistically significant differences in the average scores of administrative communication dimensions between different functional performance groups (classified via cluster analysis).
6. Very high performance is more strongly associated with the dimensions of (means and methods of administrative communication, and the communication officers) than with other dimensions.
7. There is no significant difference between very high and high performance in relation to the dimensions of (language of administrative communication, and communication skills and tools).

Second: Recommendations:

1. Adopt factor analysis as a method for identifying latent dimensions of administrative communication, as it is one of the best techniques for uncovering correlations among the multiple variables of administrative communication.
2. Enhance the use of formal and verbal communication within the college in a structured manner.
3. Invest in building an effective communication environment that promotes employee interaction.
4. Organize training programs for those responsible for administrative communication.

5. Utilize cluster analysis as a tool to analyze employee patterns and redistribute tasks accordingly.

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