RESEARCH ANALYSIS DOCUMENTATION

Telemedicine in Public Health Emergency Response, Lagos State: Data Analysis

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Statistical analysis · Chi-square · Multiple regression · ANOVA · Correlation

440	4	5	4
respondents	professional groups surveyed	research objectives	kinds of test used

Method and design only. The findings belong to the study's author and are not reproduced here.

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01 THE STORY BEHIND THE STUDY

Imagine an outbreak in Lagos. Clinics are full and roads are blocked. A doctor could advise a patient by video, or a health official could track cases by phone, if the systems were in place and people trusted them.

This study asks how far telemedicine is part of Lagos's emergency response, and what makes people use it.

The study evaluates whether telemedicine has been built into public health emergency response in Lagos State, how aware the people involved are of it, and what helps or blocks its adoption.

02 WORDS USED IN THIS DOCUMENT

Word	What it means
Telemedicine	Giving health care or health advice at a distance, by phone, video or an app.
Public health emergency	An outbreak or disaster that threatens the health of many people at once.
Adoption	The extent to which an organisation or person actually uses the service.
Likert item	A statement that respondents rate on a scale, such as from strongly disagree to strongly agree.
Multiple regression	A model that measures how much each of several factors adds to an outcome while the others are held constant.
ANOVA	A test that asks whether the model, or the average of several groups, differs by more than chance.
Correlation	How closely two measures move together. It does not show that one causes the other.

Word	What it means
Durbin-Watson	A check that the errors of a regression are not related to each other.

03 WHAT THE STUDY ASKS

Objective	What it sets out to find
1	The level of telemedicine awareness among respondents.
2	The effectiveness of telemedicine in public health emergency responses.
3	The current state of telemedicine in public health emergency response.
4	The factors that affect telemedicine adoption.
5	The effect of telemedicine on access to health care and on service delivery during emergencies.

04 THE SAMPLE

A survey of 440 respondents: healthcare workers (280), public health officials (88), government representatives (44) and IT specialists (28). Gender was close to even. Respondents were asked about their years of experience and their level of education, so that the analysis could show whether the views differ with these.

Including IT specialists and government representatives, as well as clinicians, means the study hears from the people who build, regulate and use the systems.

05 HOW THE ANALYSIS WAS PLANNED

DESCRIBE Who answered ▸ **AWARENESS** Frequencies and a chi-square test ▸ **EFFECTIVENESS** Multiple regression ▸ **ASSOCIATION** Chi-square for categories ▸ **INTERPRET** Plain-language reading

Objective	Method	Why this method
Profile of respondents	Frequency tables	Shows who answered before any comparison
1: awareness	Frequencies, and a chi-square test of familiarity against frequency of use	Awareness is a count of who knows, so a share is the clearest summary; the test asks whether familiarity goes with use
2: effectiveness	Multiple regression, with an ANOVA of the model and a Durbin-Watson check	Effectiveness is a score, and several predictors act at once
3: current state	Chi-square tests of occupation against perceived integration, with a likelihood ratio check	Compares the answers of different respondent groups
4: adoption factors	Chi-square tests and correlation	Shows which factors go with adoption
5: access and delivery	Frequencies and chi-square tests	Tests whether views on access differ between groups

06 HOW A REGRESSION TABLE IS READ

HOW IT IS READ, STEP BY STEP

1. The ANOVA row says whether the model as a whole explains the outcome better than chance.

2. R-squared says what share of the variation in the outcome the factors explain together.
3. Each coefficient says how many points the outcome moves for one more point in that factor, holding the others fixed.
4. The Durbin-Watson value, close to 2, shows that the errors are independent, which the method assumes.
5. The reading in words names the factor, the direction and the size, and says that it is an association.

> **An everyday example.** Suppose, for illustration only, that a model of effectiveness has a coefficient of 0.4 for organisational support. Then each extra point of support goes with 0.4 more points of effectiveness, if the other factors stay the same. These numbers are invented to show the reading. They are not from the study.

07 CHECKS TO APPLY WHEN READING THE RESULTS

- Look for the number of respondents behind every table of percentages.
- Confirm that the regression assumptions are reported, including the independence of errors.
- Read every conclusion as an association, because a one-time survey cannot show cause.
- Check that each interpretation points to its source in the literature.

08 LIMITS OF THE DESIGN

The sample is dominated by healthcare workers, who may rate telemedicine differently from patients. Attitudes are self-reported, so perceived effectiveness may differ from measured effectiveness. The study is cross-sectional and covers Lagos State only.

09 OUTPUTS

A results chapter with descriptive tables, five objective-by-objective analyses, a regression with ANOVA and diagnostics, and a discussion with references.

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