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EFFECT OF DATA COLLECTION PRACTICES ON THE PERFORMANCE OF HEALTH PROJECTS IN RWANDA: A CASE OF INDOOR RESIDUAL SPRAYING PROJECT

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Abstract: **This study seeks to establish the effect of data collection practices on the performance of health projects in Rwanda. The study was anchored on the following objectives: to establish the effect of mobile data collection on the performance of health projects in Rwanda; to determine the effect of paper based data collection on the performance of health projects in Rwanda; and to determine the effect of personal digital assistants data collection on the performance of health projects in Rwanda. The study used a descriptive case survey design. A sample size of 310 respondents was drawn from a population of 1,383 using Yaro Yamane (1967) formula. Stratified random sampling was employed to sample the survey respondents from the target population. Data was collected using structured questionnaires and document reviews. The reliability and validity of the data collection instruments were tested using Cronbach's Alpha coefficient at an index of 0.70 and based on a 5-point Likert Scale for multiple items obtained from a pilot survey. The content validity of the questionnaires was done by supervisors from the University. Multiple regression analysis and Correlation analysis were used to establish the effect of data collection practices on the performance of health projects in Rwanda. The findings provided significant implications for future research and practice on how data collection practices on the performance of health projects would be improved.**

Keywords: **Data Collection Practices, Performance of health projects.**

1. INTRODUCTION

Data collection is mostly done within the health facilities when clients/patients visit the facilities. Within facilities, there are well-structured mechanisms (form and registers) that are used to collect data. Outside the facilities, the systems used to gather information for the management of health services are too many and uncoordinated, and the HMIS thus needs to integrate all vertical systems into one (Chaulagai, 2015).Evidence is clear that there are some anomalies and errors that occur during data collection. Some of the anomalies and errors observed in the registers at this level include additional information errors and omission errors like data for certain dates having not been captured. In health sector, data on the prognosis of such common diseases like malaria is critical for its management. Rwanda's entire population of 12 million is at risk of malaria. Young children and pregnant women are particularly vulnerable to the disease.

1.1 Statement of the Problem:

To make the right decisions, every business depends on timely and accurate data. However, many organizations still use paper-based methods to enter, access, and manipulate data which can result in inaccurate and incomplete information. To resolve these issues, many manufacturing, distribution, retail, and field services operations apply proper data collection solutions to drive more timely and accurate information into their enterprise systems. Data collection is mostly done

within the health facilities when clients/patients visit the facilities. Within facilities, there are well-structured mechanisms (form and registers) that are used to collect data. Outside the facilities, the systems used to gather information for the management of health services are too many and uncoordinated, and the HMIS thus needs to integrate all vertical systems into one (Chaulagai, 2015). Evidence is clear that there are some anomalies and errors that occur during data collection. Some of the anomalies and errors observed in the registers at this level include additional information errors and omission errors like data for certain dates having not been captured. However, maternal and child data are not always generated only at the health facility level but also with Community Health Workers (CHWs). Over 80% of Rwanda's population lives in the rural areas and given the fact that there are insufficient health facilities, most mothers in rural settings face challenges to access health facilities. This insufficiency of health facilities leads to an increase in data that are not recorded in the health management information system. In addition to this, since a substantial percentage of malaria cases are treated by CHWs, such data needs to be captured and recorded as well in a timely manner. As a consequence a high prevalence of malaria cases are not recognized by the health sector. This study thus seeks to establish the effect of data collection practices on the performance of health projects in Rwanda while looking at the case of Rwanda's Indoor Residual Spraying Project.

1.2 Objectives of the Study:

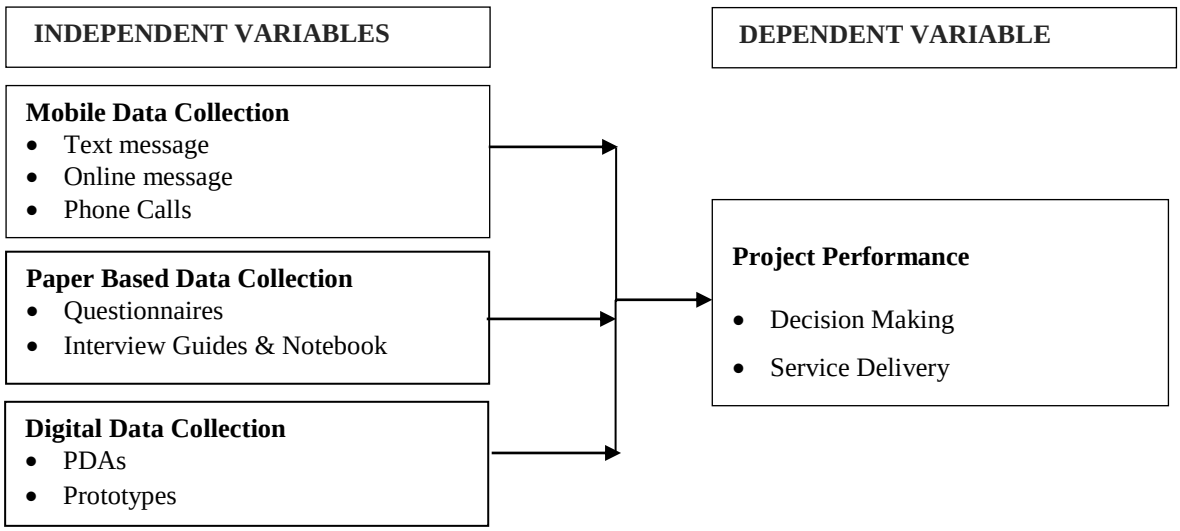
1.2.1 General Objective:

The general objective of this study was to establish the effect of data collection practices on the performance of health projects in Rwanda.

1.2.2 Specific objectives:

1. To determine the effect of mobile data collection on the performance of health projects in Rwanda.
2. To determine the effect of paper based data collection on the performance of health projects in Rwanda.
3. To determine the effect of personal digital assistants data collection on the performance of health projects in Rwanda.

2. CONCEPTUAL FRAMEWORK



3. RESEARCH METHODOLOGY

- **Research Design**: In this study; descriptive survey research design was used based on a case study which helped to depict the participants in an accurate way.
- **Target Population**: The research was carried out in Rwanda's Health Indoor Residual Spraying Project comprising of 1,383 people from the following categories: project staff, district and sector support staff and Community Health Workers of target districts (Kirehe and Nyagatare) of Indoor Residual Spraying Project.
- **Sample size:** a sample size of 310 respondents was used within an error limit of 0.05.
- **Data Collection instruments:** Structured questionnaires and documentary review were used to collect data among the 310 respondents

4. SUMMARY RESEARCH FINDINGS

Multiple linear regression analysis was conducted to investigate the effect of Data Collection Practices on Project Performance in Rwanda using the model below:

$$PP = \beta_0 + \beta_1 \sum_{i=1}^{n=3} X_1 + \varepsilon_1 \quad \text{.....Eq. (i)}$$

The independent variables (X_1-X_3) covered are formal education, in Mobile Data Collection and education Digital Data Collection .

4.1 Mobile Data Collection and Project Performance (Service Delivery):

Linear regression analysis model used to investigate the effect of Mobile Data Collection on Project Performance in Rwanda is indicated below:

$$PP_{SERVICEDELIVERY} = \beta_0 + \beta_1 X_1 + \varepsilon_1 \quad \text{.....Eq. (ii)}$$

Table 1: Model Summary [b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.923[a]	.852	.851	.156

Table 2: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	P-value
1	Regression	76.331	1	76.331	14.409	.000[b]
	Residual	4.291	96	.066		
	Total	80.622	97			

Table 3: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	P-value
		B	Std. Error	Beta		
1	(Constant)	1.934	.155		2.124	.020
	Mobile Data Collection	.329	.015	.326	3.464	.000

The study sought to establish the effect of Mobile Data Collection on Project Performance (Service Delivery) in Rwanda. An R-square = .852, indicates that 85.2% of variation in Project Performance (Service Delivery) is being explained by the model leaving only 14.8% of the variation in Project Performance (Service Delivery) not being explained by the model. The equation derived was:

$PP_{SERVICE\ DELIVERY}$ = 1.934 +0.329 Mobile Data Collection:

The beta coefficient of Mobile Data Collection is 0.329 with a statistically significant p=0.000 and t-statistic of 3.464. Therefore, the model fits the data well since p-value =0.000 which is less than 0.05. The positive coefficient further demonstrates that one unit change in Mobile Data Collection will increase Health Project Performance (Service Delivery) by 0.329 units in Rwanda. This finding concurs with the findings of Mumford (2000) which indicated that the use of mobile technology to collect data is more effective as an enabling technology for resource limited settings such as in the developing world. Mumford (2000) further pointed out that the most common use of mobile phones in international public health was to disseminate health messages, often through text messages or SMS. However, evidence suggests that the Health environment is now starting to focus on using SMS functions to collect health data as well.

Paper Based Data and Project Performance (Service Delivery):

Linear regression analysis model used to investigate the effect of Paper Based Data Collection on Project Performance in Rwanda is indicated below:

$$PP_{SERVICEDELIVERY} = \beta_0 + \beta_2 X_2 + \varepsilon_2 \quad \text{.....Eq. (iii)}$$

Table 4: Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.845[a]	.714	.711	.311

Table 5: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	P-value
1	Regression	63.123	1	23.123	9.082	.000[b]
	Residual	7.285	96	.097		
	Total	80.408	97			

Table 6: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	P-value
		B	Std. Error	Beta		
1	(Constant)	2.141	.227		1.742	.000
	Paper Based Data Collection	2.432	.0435	.415	2.157	.000

The study sought to establish the effect of Paper Based Data Collection on Project Performance (Service Delivery) in Rwanda. An R-square =.714, indicates that 71.4% of variation in Project Performance (Service Delivery) can be explained by the variation in Paper Based Data Collection leaving only 28.6% of the variation in Project Performance (Service Delivery) not explained by the model. Therefore, the model equation derived was:

$RD_{SERVICE\ DELIVERY}$ = 2.141 +2.432 Paper Based Data Collection:

The beta of in Mobile Data Collection is 0.432 with a statistically significant (p=0.000) and t-statistic of 4.157. The positive coefficient of determination indicates that there is positive correlation between Mobile Data Collection and Health Project Performance (Service Delivery) in Rwanda. The positive coefficient further demonstrates that a one unit change in Mobile Data Collection will increase health Project Performance (Service Delivery) in Rwanda by 2.432 units in Rwanda. This supports Shaw et al., (2009) in their study on Health Information Systems in Developing Countries which established that collecting health data is mostly done through paper based methods where physical forms are filled and collected manually. The transcription of data for analysis is difficult and leads to low quality of data especially when the data volume is large. Shaw et al., (2009) further established that supervision of multiple data collections from multiple locations is difficult and may lead to large time lag for data to be available for use. Further, he established that Data quality is acknowledged as a major challenge in HIS, and a shortage of qualified personnel is cited as the primary cause.

Digital Data Collection and Project Performance (Service Delivery):

Linear regression analysis model used to investigate the effect of Digital Data Collection on Project Performance in Rwanda is indicated below:

$$PP_{SERVICEDELIVERY} = \beta_0 + \beta_3 X_3 + \varepsilon_3 \quad \text{.....Eq. (iv)}$$

Table 7: Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.899[a]	.808	.806	.275

Table 8: ANOVAa

Model		Sum of Squares	df	Mean Square	F	P-value
1	Regression	70.432	1	30.432	14.422	.000[b]
	Residual	10.242	96	.075		
	Total	80.673	97			

Table 9: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	P-value
		B	Std. Error	Beta		
1	(Constant)	.585	.201		2.907	.005
	Digital Data Collection	3.225	.011	.221	5.085	.000

The study sought to establish the effect of Digital Data Collection and Health Project Performance (Service Delivery) in Rwanda. An R-square= .808, indicates that 80.8% of variation in Project Performance (Service Delivery) can be explained by the variation in Digital Data Collection leaving only 19.2% of the variation in Project Performance (Service Delivery) not explained by the model. Therefore, the model equation derived was:

$PP_{SERVICE\ DELIVERY}$ =0.585 +3.229 Digital Data Collection:

The beta of Digital Data Collection is 0.221 with a statistically significant (p=0.000) t-statistic of 5.085. The positive coefficient of determination indicates that there is positive correlation between Digital Data Collection on Project Performance (Service Delivery) in Rwanda. The positive coefficient further demonstrates that a one unit change in Digital Data Collection will increase Project Performance (Service Delivery) in Rwanda by 3.229 units. The findings here support the view of Oliver et al., (2013) who conducted a study in 2008-2009 on the use PDAs to record daily dietary and physical activity of obese adolescents in Spain. The findings indicated that using PDAs to collect data would provide a more complete data than paper-based registers. This study helped to give evidence that digital data collection could improve the quality of data being collected for M&E efforts. In fact according to Curioso & Kurth, (2007), the use of PDAs was low in collecting health information data despite the fact that there is high acceptability and feasibility of as a research tool in the low-to-middle income countries. Instead, they established that smart phones quickly infiltrated the mobile market and replaced PDAs.

Mobile Data Collection and Project Performance (Decision Making):

Linear regression analysis model was used to investigate the effect of Mobile Data Collection on Project Performance in Rwanda is indicated below:

$$PP_{DECISIONMAKING} = \beta_0 + \beta_1 X_1 + \varepsilon_1 \quad \text{.....Eq. (v)}$$

Table 10: Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.901[a]	.811	.809	.266

Table 11: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	P-value
1	Regression	69.108	1	29.108	12.145	.000[b]
	Residual	6.780	96	.071		
	Total	75.888	97			

Table 12: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	P-value
		B	Std. Error	Beta		
1	(Constant)	2.881	.172		2.111	.000
	Mobile Data Collection	3.205	.010	.201	4.501	.000

The study sought to establish the effect of Mobile Data Collection on Project Performance (Decision Making) in Rwanda. An R-square=.811, indicates that 81.1% of variation in Project Performance (Decision Making) can be explained by the variation in Mobile Data Collection leaving only 18.9% of the variation in Project Performance (Decision Making) not explained by the model. The generated model equation to be used will be as follows:

$RD_{HEALTHQUALITY}$ = 2.881 +3.205 Mobile Data Collection:

The beta of Mobile Data Collection is 3.205 with a statistically significant (p=0.000) t-statistic of 5.501. The positive coefficient of determination indicates that there is positive correlation between Mobile Data Collection and Project Performance (Decision Making) in Rwanda. The positive coefficient further demonstrates that a one unit change in Mobile Data Collection will increase Project Performance (Decision Making) by 3.205 units in Rwanda. This finding concurs with the findings of Mumford (2000) which indicated that the use of mobile technology to collect data is more effective as an enabling technology for resource limited settings such as in the developing world.

Paper Based Data Collection and Project Performance (Decision Making):

Linear regression analysis model used to investigate the effect of Paper Based Data Collection on Project Performance in Rwanda is indicated below:

$$PP_{DECISIONMAKING} = \beta_0 + \beta_2 X_2 + \varepsilon_2 \quad \text{.....Eq. (vi)}$$

Table 13: Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.805[a]	.649	.645	.337

Table 14: ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	P-value
1	Regression	63.434	1	23.434	17.160	.000[b]
	Residual	12.699	96	.132		
	Total	76.133	97			

Table 15: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	P-value
		B	Std. Error	Beta		
1	(Constant)	1.761	.235		3.597	.000
	Paper Based Data Collection	2.891	.026	.807	3.870	.000

The study sought to establish the effect of Paper Based Data Collection on Project Performance (Decision Making) in Rwanda. An R-square= .649, indicates that 64.9% of variation in Project Performance (Decision Making) can be explained by the variation in Paper Based Data Collection leaving only 35.1% of the variation in Project Performance (Decision Making) not explained by the model. Therefore, the model equation derived was:

$PP_{DECISION\ MAKING}$ = 1.761 +2.891 Paper Based Data Collection:

The beta of Paper Based Data Collection is 2.891 with a statistically significant (p=0.000) t-statistic of 3.870. The positive coefficient of determination indicates that there is positive correlation between Paper Based Data Collection & Project Performance (Decision Making) Health Projects in Rwanda. The positive coefficient further demonstrates that a one unit change in Paper Based Data Collection will increase Project Performance (Decision Making) Health Projects in Rwanda by 2.891 units. This supports Shaw et al., (2009) in their study on Health Information Systems in Developing Countries which established that collecting health data is mostly done through paper based methods where physical forms are filled and collected manually. The transcription of data for analysis is difficult and leads to low quality of data especially when the data volume is large. Shaw et al., (2009) further established that supervision of multiple data collections from multiple locations is difficult and may lead to large time lag for data to be available for use. Further, he established that Data quality is acknowledged as a major challenge in HIS, and a shortage of qualified personnel is cited as the primary cause.

Digital Data Collection and Project Performance (Decision Making):

Linear regression analysis model used to investigate the effect of Digital Data Collection on Project Performance in Rwanda is indicated below:

$$PP_{DECISIONMAKING} = \beta_0 + \beta_3 X_3 + \varepsilon_3 \quad \text{.....Eq. (vii)}$$

Table 16: Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.841[a]	.708	.705	.315

Table 17: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	P-value
1	Regression	61.161	1	21.161	21.797	.000[b]
	Residual	8.726	96	.091		
	Total	69.888	97			

Table 18: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	P-value
		B	Std. Error	Beta		
1	(Constant)	1.353	.221		4.267	.000
	Digital Data Collection	2.838	.012	.161	4.558	.000

The study sought to establish the effect of Digital Data Collection provision on Project Performance (Decision Making) in Rwanda. An R-square= .708, indicates that 70.8% of variation in Project Performance (Decision Making) can be explained by the variation in Digital Data Collection provision leaving only 29.2% of the variation in Project Performance (Decision Making) not explained by the model. Therefore, the model equation derived was:

$PP_{DECISION\ MAKING}$ = 1.353 +2.838 Digital Data Collection:

The beta of Digital Data Collection provision is 2.838 with a statistically significant (p=0.000) and t-statistic of 4.558. The positive coefficient of determination indicates that there is positive correlation between Digital Data Collection provision and Project Performance (Decision Making) in Rwanda. The positive coefficient further demonstrates that a one unit change in Digital Data Collection will increase Project Performance (Decision Making) by 2.838 units in Rwanda. The findings indicated that using PDAs to collect data would provide a more complete data than paper-based registers. This study helped to give evidence that digital data collection could improve the quality of data being collected for M&E efforts. In fact according to Curioso & Kurth, (2007), the use of PDAs was low in collecting health information data despite the fact that there is high acceptability and feasibility of as a research tool in the low-to-middle income countries. Instead, they established that smart phones quickly infiltrated the mobile market and replaced PDAs.

Data Collection Practices and Project Performance (Service Delivery):

Multiple linear regression analysis was conducted to investigate the effect of Data Collection Practices on Project Performance (Service Delivery) in Rwanda using the model below:

$$PP_{SERVICEDEIIVERY} = \alpha + \beta_1 \sum_{i=1}^{n=3} X_1 + \varepsilon_1$$ **……..Eq. (viii)**

Table 19: Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.811[a]	.658	.632	.172

Table 20: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	P-value
1	Regression	122.01	3	112.22	2.641	.001[b]
	Residual	2.13	121	.015		
	Total	124.14	124			

Table 21: Co-efficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	P-value
		B	Std. Error	Beta		
1	(Constant)	2.035	.042			.053
	Mobile Data Collection	2.456	.061	2.395	1.619	.000
	Paper Based Data Collection	1.649	.004	1.605	2.425	.000
	Digital Data Collection	3.957	.035	3.524	3.114	.000

The study sought to establish the effect of Data Collection Practices on Project Performance (Service Delivery) in Rwanda. An R-square= .896, indicates that 89.6% of variation in Project Performance (Service Delivery) can be explained by the variation in Data Collection Practices leaving only 11.4% of the variation in Project Performance (Service Delivery) not explained by the model. The model equation derived was:

$PP_{SERVICE\ DELIVERY}$ = 2.035 + 2.453 Mobile Data Collection + 1.649 Paper Based Data Collection + 3.957 Digital Data Collection:

The positive coefficient of determination indicates that there is positive correlation between Data Collection Practices and Project Performance (Service Delivery) in Rwanda. The regression model demonstrates that a unit change in Mobile Data Collection will increase Project Performance (Service Delivery) in Rwanda by 2.456 units, while Paper Based Data Collection and Digital Data Collection remain constant. A unit change in Paper Based Data Collection will increase Project Performance (Service Delivery) in Rwanda by 1.649 units, while Mobile Data Collection and Digital Data Collection remain constant. Finally, a unit change in Digital Data Collection provision will increase Project Performance (Service Delivery) in Rwanda by 3.957 units, while Mobile Data Collection and Paper Based Data Collection remain constant.

However, the model indicates that increasing Digital Data Collection provision ($\beta=3.957$) contributes more, followed by increasing Mobile Data Collection ($\beta=2.456$), and lastly increasing Paper Based Data Collection ($\beta=1.649$) respectively in increasing the Project Performance (Service Delivery) in Rwanda. The positive correlation coefficients tend to reflect the findings of Eubuomwan (2010) in South Africa who observed that Digital Data Collection; Paper Based Data Collection and Mobile Data Collection were found to have statistically significant effect on Project Performance (Service Delivery).

Data Collection Practices and Project Performance (Decision Making):

Multiple linear regression analysis was conducted to investigate the effect of Data Collection Practices on Project Performance (Decision Making) in Rwanda using the model below:

$$PP_{DECISIONMAKING} = \alpha + \beta_1 \sum_{i=1}^{n=3} X_1 + \varepsilon_1$$ **……..Eq. (ix)**

Table 22: Joint Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.802[a]	.643	.621	.022

Table 23: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	P-value
1	Regression	122.00	3	13.645	2.537	.001[b]
	Residual	2.14	121	.025		
	Total	124.14	124			

Table 24: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	P-value
		B	Std. Error	Beta		
1	(Constant)	2.011	.011			.053
	Mobile Data Collection	2.249	.032	2.217	4.435	.001
	Paper Based Data Collection	1.357	.046	1.311	5.823	.001
	Digital Data Collection	3.286	.056	3.230	5.516	.002

The study sought to establish the effect of Data Collection Practices on Project Performance (Decision Making) in Rwanda. An R-square = .643, indicates that 64.3% of variation in Project Performance (Decision Making) can be explained by the variation in Data Collection Practices leaving only 35.7% of the variation in Project Performance (Decision Making) not explained by the model. The model equation derived was:

$PP_{DECISION\ MAKING}$= 2.011 + 2.249 Mobile Data Collection + 1.357 Paper Based Data Collection + 3.286 Digital Data Collection

The positive coefficient of determination indicates that there is positive correlation between Data Collection Practices and Project Performance (Decision Making) Health Projects in Rwanda. The regression model demonstrates that a unit change in Mobile Data Collection will increase Project Performance (Decision Making) in Rwanda by 2.249 units, keeping Paper

Based Data Collection and Digital Data Collection constant. A unit change in Paper Based Data Collection will increase Project Performance (Decision Making) in Rwanda by 1.357 units, while Mobile Data Collection and Digital Data Collection remain constant.

Finally, a unit change in Digital Data Collection provision will increase Project Performance (Decision Making) in Rwanda by 3.286 units, while Mobile Data Collection and Paper Based Data Collection remain constant. However, the model indicates that increasing Digital Data Collection provision ($\beta=3.286$) contributes more, followed by increasing Paper Based Data Collection ($\beta=2.249$), and lastly increasing Mobile Data Collection ($\beta=1.357$) respectively in increasing the Project Performance (Decision Making) in Rwanda. The positive correlation coefficients tend to reflect the findings of Eubuomwan (2010) in South Africa who observed that Digital Data Collection; Paper Based Data Collection and Mobile Data Collection were found to have statistically significant effect on Project Performance (Decision Making) in health projects.

5. CONCLUSIONS

Considering the significant role that data/information plays in economic growth of the country, the study sought to establish the effect of Data Collection Practices on Project Performance in Rwanda. The study concludes that Data Collection Practices have statistically significant effect on Project Performance in Rwanda. It also concludes that improving the various Data Collection Practices would eventually increase Project Performance in Rwanda in the order of Digital Data Collection, Paper Based Data Collection and lastly Mobile Data Collection Health Projects in Rwanda.

6. RECOMMENDATIONS

The study sought to establish the effect of Data Collection Practices on Project Performance in Rwanda. Since there was a positive and significant relationship between Data Collection Practices and Project Performance in Rwanda, project management stakeholders should strive to ensure that the extent of integration of the three Data Collection Practices parameters (Mobile Data Collection, Paper Based Data Collection and Digital Data Collection) are enhanced in Health Projects.

Suggestions for further research:

The study suggests that future researches should be conducted using a longitudinal design like panel design or time series instead of cross-sectional survey to bring a more dynamic result. The study also suggests that future researches should be expanded in scope to cover other sectors for comparative analysis. The study also suggests that future researches should be expanded in scope to cover other developing countries for comparative analysis and hence more conclusive results in multi-dimensional and cross-cultural set-ups in developing countries.

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