



PROJECT COMMUNICATIONS MANAGEMENT AND SUSTAINABILITY OF AFFORDABLE HOUSING PROGRAMMES IN NAIROBI CITY COUNTY, KENYA

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ABSTRACT

The general objective of the study was to establish the effect of project communications management on sustainability of affordable housing programs in Nairobi City County, Kenya. The specific objectives are to examine the effect of communication channel, and communication system on sustainability of affordable housing programs in Nairobi City County, Kenya. The study will use a descriptive research design. The target population was 11 affordable housing programs in Nairobi City County. The sample size frame was 11 project supervisors, 64 national housing projects staff, 11 contractors, 11 chief engineers, 88 project steering committee members. The current used primary data. A pilot was conducted with 10 percent of the sample hence 18 project professionals. Content and construct validity was used in this study. Cronbach's Alpha Coefficient was used to test reliability. Descriptive and inferential statistics were analyzed using SPSS Version 28. According to findings, there is a moderate significant relationship communication channel and program sustainability ($r=0.456$, $p=0.045$), and a strong significant relationship between communication system and program sustainability ($r=0.625$, $p=0.000$). The study recommendations are; the managers should adopt communication channels that are easily accessible by the intended recipients and government should invest in an effective information communication management system to promote effective integration of information and feedback from all the channels of communication

Key Words: Project Communications Management, Communication Channel, Communication System, Sustainability, Affordable Housing Programs

Background of the Study

Communications is a process whereby concepts are exchanged among individuals through a system of generic signs and words. Project communications management refers to necessary processes for ensuring proper and timely production, collection, dissemination, and distribution of project information. Project communication management is the backbone to effective decision making during the lifespan of a project. Project communication is an essential and necessary skill set for effective coordination of any project and all involved stakeholders (Senaratne & Ruwanpura, 2016).

Getting the right information to the right people at the right time and in a useful format is just as important as developing the information in the first place. Concerning distribution of project information, the most important considerations are the tools and technologies used to distribute that information. The challenge remains in ensuring that the information gets delivered to the right decision-maker or stakeholder in the right format at the right time regardless of access method or location. In the era of internet-speed, this challenge becomes even more magnified (Mnkandla, 2018). Communication skills are one of the most important skills required for project success. High quality communication occurs when project team members have enough time to communicate with each other and to exchange information formally or informally (Hysa & Spalek, 2019).

Drączkowska (2015) concluded that more than half of the money at risk in projects is due to poor or substandard communication. Ineffective communication was cited as the primary cause for 75 percent of the project failures reported as having a negative impact on the success of over the half of the respondents' projects. Effective communication leads to more successful projects and hence it allows organizations to become high performers. Ilieva-Koleva and Kasamska (2017) asserted that greater efficiency in communication is attained when multiple channels are considered. Multi-channeled and multi-voiced communication is helpful in obtaining autonomous participation and a free flow of information throughout the program implementation process. The study concluded that different channels differed in the number of cues they could convey, the timeliness of feedback, and the capacity of parties involved to express themselves.

Ensuring good quality communication between the project team members is crucial since it makes it possible to use different social networks. This is especially important when project members are experts in different fields and in different countries. Social media can boost communications through reduced meeting duration. Both online and offline environments are an integral part of project management. Social media plays a crucial role in project activities. Social media tools help communicate with stakeholders and support dissemination of information therefore increasing the sustainability of results of the project (Pivec & Maček, 2019). Organizational chart is a key tool for identifying communication needs. It shows the hierarchy of who should report to whom. As project organizations grow larger and the complexity of project goals increases, effective communications management in project teams becomes more difficult (Mavuso & Agumba, 2016).

Statement of the Problem

Affordable Housing Program (AHP) boosts economic growth through upgrading peoples' standards of living and also creates employment in both formal and informal sector. Housing is part of the real estate sector that accounts for 9.1 percent of Kenya's GDP. Affordable housing is part of the Big Four transformative agenda which identified four priority initiatives that were to be implemented during the 2018-2022 plan period. These initiatives included food security and nutrition; universal healthcare; affordable housing and manufacturing. The government had planned to deliver 500,000 by 2022 but only managed to deliver 1,000 units by December 2022.

Even before the onset of the COVID-19 pandemic, the government had no sustainable plan on how to fund the initiative despite increasing its budgetary allocation by 75 percent to Kes 10.5 bn in FY'2019/20, from Kes 6.0 bn in FY'2018/19 (Cytonn, 2022). Sustainability AFP has been impeded by several challenges; budgetary allocation to affordable housing has been low hence limiting the supply of housing units, the alternative funding (capital market structure) has been non-supportive and under-developed, there is an inadequate supply of serviced land ready for development and available lands are expensive. This has made the projects have little effect on the economic, social, and environmental dynamics. The findings by Cytonn supports Gikam and Karanja (2019), who noted that affordable housing programs are somehow not sustainable due to inadequate stakeholder involvement, incapacitated project teams, and challenges in funding.

Several researchers have conducted studies on project communication management; Abraham (2019) study on practices of project communication management in water project found that the practice of project communication management, communication method, and communication channel had statistically positive significant influence on project performance. Katerega and Sebunya (2017) on the relationship between project communication and project performance in Public Universities revealed a positive significant relationship between project communication and project performance. Guuru (2021) on effect of communication strategies on the successful implementation of programs at the International Livestock Research Institute - Kenya, found that participatory communication strategy, results-driven communication strategy and multi-channeled communication strategy had positive effect on the success of implementation of programs.

Mugo, and Moronge, (2018) on the influence of organizational communication on the implementation of building projects within Nairobi County revealed that appropriate communication channel ensured that information was relayed to the right audience hence improving team coordination, increase synergy and trust. However, there is study limitation on project communications management and sustainability of affordable housing programs. This study therefore, sought to fill the research gap by examining the effect of project communications management and sustainability of affordable housing programs in Nairobi City County, Kenya.

Specific Objectives

- i. To assess effect of communication channel on sustainability of affordable housing programs in Nairobi City County, Kenya.
- ii. To establish effect of communication system, on sustainability of affordable housing programs in Nairobi City County, Kenya.

LITERATURE REVIEW

Theoretical Framework

Communication Theory

Communication Theory was developed by Shannon's and Weaver (1949). Communication theory explains the process of communication. According to Communication theory, a message begins at an information source, which is relayed through a transmitter, and then sent via a signal towards the receiver. But before it reaches the receiver, the message must go through noise (sources of interference). The receiver must convey the message to its destination. Today, communication is regarded as the most important factor in business, and that the ability of the company to communicate can determine its success. This theory is specially designed to develop effective communication between sender and receiver which must pass through a communication channel. Shannon's and Weaver (1949) explains' that while one person is speaking, the other is listening. How this listening is done constitutes information for the sender (Bryant & Heath, 2000). This theory is relevant in study since effective communication in an organization can only be achieved if both the receiver and the sender can interpret the information being communicated.

Technology Acceptance Theory

Technology Acceptance theory was developed by Davis (1989). This is an information systems theory that models how users come to accept and use technology. The theory states that when users experience a new technology, their decision is influenced by various factors. It suggests that when users are presented with a new technology, several factors influence their decision about how and when they will use it. Preparedness, notably - Perceived usefulness (PU) defined by Fred Davis (1989) as the degree to which a person believes that using a particular system would enhance his or her job performance. Perceived ease of use defined by Davis (1989) as the degree to which a person believes that using a particular system would be free from effort. The theory is keen on forecasting user acceptance of information technologies.

Technology enabled change processes are different mainly because with technology, organizational and business processes need integration to realize the anticipated benefits of the technological implementation. Information systems play an essential role in organizations with the power to change how business is conducted. The technology adopted, for instance in communication, will enhance the effectiveness of communication in project management. It will also promote easier and faster communication to the project team and project stakeholders. Therefore, in case of project changes, less time would be taken to agree on whether to implement the changes and any other issue arising regarding project implementation.

Conceptual Framework

A conceptual framework is a diagrammatic, flow chart or figurative illustration explaining the relationships between factors and variables identified, relevant to the study (Oso & Onen, 201). The theory presents the study variables; the independent and dependent variable. The sub variables are also presented in the framework.

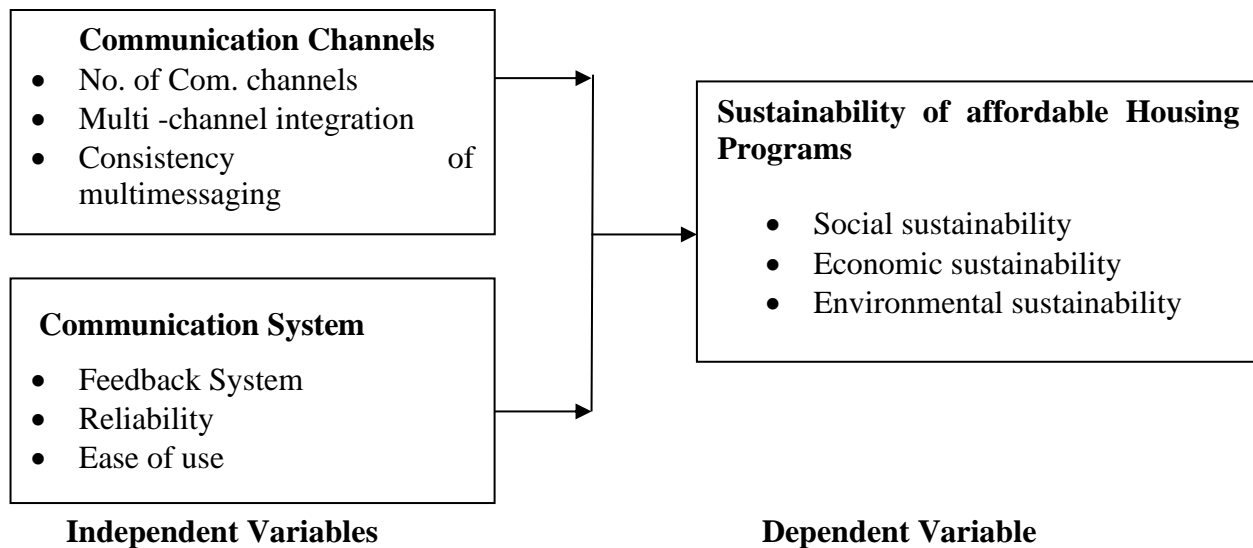


Figure 1: Conceptual Framework

Communication Channel

Communication channel is a medium in which project information is communicated. The most common communication mediums are face-to-face, video conferencing, documents for project planning, meetings, portals for the project, email, and telephone all of which can be viewed as tools or channels to communicate information (Gómez-Ferrer, 2017). The emerging channels of communication have gained popularity and importance in organizations as employees have realized the positive impacts and its influence on the productivity. The emerging channels are

being incorporated in the organizations and replacing the traditional channels due to the ease of access and convenience. This has enhanced effective communication among employees which in return boosts organizational performance. The Short Message Service (SMS) is medium of transmitting written information (Nasser, 2012). SMS became famous in Kenya during the introduction of mobile phones and more popularly known as text messaging. In Kenya, it is the most used mode of communication since some networks provides them for free, whereby a sender can send to another requesting the receiver to call popularly known as “please call me “and it is widely and effectively used in Kenya today (Jhingan, 2016).

Electronic mail (e-mail) has become an integral part of the communication in most of the organizations with employees having the ability to access their e-mail through their advancement. Recently, the digital landscape has advanced with a wide range of digital social media accessible to individuals for communication both personally and professionally. Although e-mail may be perceived to have been overtaken by other channels such as Facebook, Twitter, and blogs, it is still important in the communication network in most workplaces (Kushlev & Dunn, 2015). Utilized by many people globally, the Social Media Sites have changed the behavior of people while online, leading to the reduction of private inhibitions of exchanging information online (Tankard & Paluk, 2016). According to Boyd and Ellison (2020), social media sites allow people to create profiles in a closed system and come up with users list with which connections can be made and information shared. It is also described as a virtual community of internet users with a desire to interact with each other on a particular field of interest. Multi-channeled communication strategy calls for efficiency in integrating multiple channels as well as cohesiveness and consistency of multi-voiced messages. Maintaining open, accurate and regular channels of communication within the different levels of the project stakeholders and staff is vital to ensuring smooth and efficient flow of instructions from projects managers to the beneficiaries and sufficient warning of changes and risks to enable preparation and early assessment (Binder, 2015).

Communication System

A communication system is made up of devices that employ one of two communication methods (wireless or wired), different types of equipment (portable radios, mobile radios, base/fixed station radios, and repeaters), and various accessories (speaker microphones, battery eliminators, and carrying cases) and/or enhancements (encryption, digital communications, security measures, and interoperability/networking) to meet the user needs (Phisuk, 2017). Feedback in communication is the response, reaction, or information given by the recipient of a message to the sender. It is the process of letting someone know which areas they need to improve (Zahid, Qinghe, and Sohail, 2021). Feedback clears out the mind, it removes the stress from the mind of the receiver because they can tell the things that they want. Feedback plays a very vital role since it helps to make proper decisions which prevent massive losses. It motivates the employees as well as boosts their morale therefore improving their productivity and efficiency. Feedback completes the communication as two-way communication requires feedback from the receiver. Through the feedback, sender can understand the thought of the reliever as what his needs is (Dixit, 2018).

Empirical Review

Communication Channel and Project Sustainability

Parham and Li (2018) studied effects of communication management on infrastructure projects in Jamaica. The study adopted a quantitative approach and utilized questionnaires for data collection. The sample was 140 project professionals involved in infrastructure projects. Findings showed that ineffective utilization of communication methods lead to obstruction and project delay. Penned communication was classified as the most important communication methods to be utilized in implementation of projects. Penned communication is brief, inconspicuous, and precise and certain. Oral communication was classified as the second important form of communication

method and included both telephone and face-to-face communication. Electronic communication was classified as the third important method of communication utilized in project management.

Ilieva-Koleva and Kasamska (2017) examined the creation of effective strategies in communication management in the context of program work under the European Union. The study focused on four international projects across 18 EU countries. Results showed that multi-channeled and multi-voiced communication was helpful in obtaining autonomous participation and a free flow of information throughout the program implementation process. The study concluded that different channels differed in the number of cues they could convey, the timeliness of feedback, and the capacity of parties involved to express themselves. Therefore, greater efficiency in communication was attained when multiple channels were considered.

Gamil and Rahman (2023) studied effects of poor communication on construct projects. Data was collected using a questionnaire survey. The target was construction practitioners in the Malaysian construction industry. Findings showed that reliability and efficiency of the communication enhances effective communication and performance of construction projects. Ajongbah (2019) investigated project communications management in Ghana. Data was collected from 65 respondents using questionnaires. The results showed that various communication channels were employed which included meetings, seminars/workshops, daily team briefings, reports, e-mails, focus group discussions, social media (WhatsApp, Facebook, Twitter, Instagram), panel discussion, notices/posters, presentations, advertisement, brochures/newsletters, town hall meetings, newspaper and video conferencing.

Mulili (2018) explored the effect of communication on the performance of Turnkey Africa Kenya Ltd. The study employed a case research design. Findings showed that multi-channeled communication approach affected the sustainability of change programs. According to the findings, using multi-channeled communication approach had cultivated a broad base of interactive opportunities that opened up the ability to impact the lives of all stakeholders at different touch points in their organizational life. With the multi-channel approach, repetitive messages from different channels and perspectives were easier to process and understand which enhanced the efficiency of strategic communications in the firm. The study found that the organized use of the several channels led to active information and collection of feedback.

Sang (2016) assessed communication channels implementation at Moi Teaching and Referral Hospital (MTRH). The communication theory was used to inform the study and adopted an explanatory design. The sample was 510 respondents and questionnaires were used to collect data. Results showed that communication channel have a significant relationship with implementation of performance management. This was supported by a strong correlation between communication and implementation of performance management. Achar, Chebii, and Mugo, (2021) examined the roles that communication channels have on implementation of housing construction in Nairobi City County Government, Kenya. Target population was 256 participants (professionals in design, approval and construction of public housing projects within Nairobi). Results showed a significant relationship communication channel and project implementation.

Communication System and Project Sustainability

Piozin et al. (2018) explored the usage of the virtual communication practices in the industrialized building system in the Malaysian construction industry. Findings established that most of the team members were using virtual communication during project implementation due to modern organization reform. Use of virtual communication facilitated faster and effective delivery of information, quicker decision making, and reduced delays in project delivery. Mmbughu (2015) studied effective application of ICT on meeting federation communication target through its projects. The study employed the cross-sectional research design. Primary and secondary data was

used. The study revealed a strong relationship between project communication systems and the quality of project.

Munyao (2017) investigated effect of the use of Information and Communication Technology performance of Community Based Organizations in Kitui County, Kenya. The study used descriptive research design. The target population was 168 managers in charge of Community Based Organizations in Kitui County, Kenya. Stratified random sampling was used to select a sample size of 85 Community Based Organizations. The study used primary data using a questionnaire. The study revealed that Community Based Organizations had insufficient computer hardware resources and that Information and Communication Technology Infrastructure had helped them enhance communication amongst themselves and with stakeholders. This enhanced community projects performance and sustainability. Okediashi and Ogwueleka (2016) explored utilization of ICT infrastructure in the Nigerian construction industry. Data was collected from 148 respondents using a questionnaire. Findings established project managers, site managers and quantity surveyors as the primary users of ICT devices. The foremen were the least users of ICT. In addition, word processing/accounting systems, electronic communication systems and project management systems were the three top rated in terms of frequency of use, while quality as well as cost impacts of ICT infrastructure use were the most important factors contributing to overall project performance.

Kibet, Mugo, and Nassiuma (2023) assessed the influence of communication flows on project implementation at Kenya Rural Roads Authority in Elgeyo Marakwet. An explanatory research design was adopted and the target population for the study was 122 KeRRA staff selected from various departments. The study findings indicated that communication flows had a positive and significant influence on project implementation. The study concluded that communication flows were critical to successful project implementation. Mugo (2018) sought to establish the influence of organizational communication on the implementation of building projects within Nairobi County. The target was 80 building projects in Nairobi City County. The study revealed that clear roles in the project organization aim at building effective organizational communication and that a well-documented communication plan was essential to enhance project implementation. It also revealed that availability of information and transparency to all participants during the project, increases synergy. Further, appropriate communication channel ensured that information was relayed to right audience and improved team coordination and increased synergy and trust. The level of skill among personnel ensured accurate interpretation of information relayed and the use of modern and compatible IT software also ensured clear and timely interpretation of information.

RESEARCH METHODOLOGY

The study used a descriptive research design. Descriptive research design is used to describe an event or phenomena as it exists at present and is appropriate when the study is concerned in specific predictions, narrative of facts and characteristics concerning individuals or situations (Kothari, 2014). The target population was affordable housing programs in Nairobi City County. According to the State Department for Housing, Urban Development, and Public works (2022) there are 11 complete affordable housing programs within Nairobi City County. The housing programs were the unit of analysis while the unit of observation was the project management team. The sampling frame was the 11 project supervisors, 64 national housing projects staff, 11 contractors, 11 chief engineers, and 88 project steering committee members. The study adopted census survey. Census survey is a statistical investigation in which the data are collected for each and every element/unit of the population. Yin (2013) recommended use of census when a target is less than 200. The study hence sampled all the 185 professionals involved in management of affordable housing programs.

The current study used primary data. The questionnaires were closed ended. Questionnaires were administered through drop and pick later method. A pilot study was conducted to assess the validity and reliability of the questionnaire in line with O'Connor and Kleyner (2012). Normally, an instrument should be pretested in about 1 to 10 percent of the sample population. In this study, a pilot was conducted with 10 percent of the sample hence 18 project professionals participated in the pilot. Descriptive and inferential statistics were used in this study. The descriptive included frequency, mean, and standard deviation while inferential included on the hand include correlation and regression. The regression co-efficient of the independent variables were interrogated to determine the significance of their effect on the dependent variable using the t-value and their respective the p-value. The P-values of results of the multiple regression analysis was used to test for significance of the relationship between variables

RESEARCH FINDINGS AND DISCUSSIONS

The sample size of study was 185 respondents. The pilot test was conducted with 18 respondents representing 10% of the sample size. The pilot respondents were excluded from actual study and questionnaires were hence administered to 167 respondents and 138 were successfully answered. The response rate was 82.6% which is considered an excellent response rate as recommended by Kothari (2012) that an adequate response rate is one that is greater than 50%, while an exceptional response rate is typically one that is greater than 70%.

Communication Channel

The first objective sought to assess effect of communication channel on sustainability of affordable housing programs in Nairobi City County, Kenya. Respondents were asked to tick on the extent to which they agree with statements related to communication channels. Findings are presented in Table 1

Table 1: Communication Channel

Key: SD=Strongly disagree, D=Disagree, NS=Not Sure, A=Agree, SA= Strongly agree, M=Mean.

Statements	SD		D		N		A		SA		M
	F	%	F	%	F	%	F	%	F	%	
The project manager uses diverse communication channels to facilitate a free flow of information among program stakeholders throughout the program cycle	22	15.9	6	4.3	6	4.3	46	33.3	58	42.0	3.81
Use of SMS has led to getting notification on project related matters on time	6	4.3	11	8.0	6	4.3	34	24.6	81	58.7	4.25
SMS serves as a reminder of any task assigned before the deadline	3	2.2	14	10.1	14	10.1	8	5.8	99	71.7	4.35
SMS improves time taken to pass information from the sender to recipient due to its efficiency and convenience	8	5.8	6	4.3	6	4.3	54	39.1	64	46.4	4.16
Email has made drafting letters to relevant authorities easier	15	10.9	3	2.2	10	7.2	51	37.0	59	42.8	3.99
Use of email has led to increased access in memos	9	6.5	18	13.0	3	2.2	45	32.6	63	45.7	3.98
Use of email as a channel of communication enhances sending and receiving of mails	12	8.7	8	5.8	27	19.6	30	21.7	61	44.2	3.87
Social networking has created platforms such as WhatsApp for communication and correspondences among the project team members.	3	2.2	4	2.9	17	12.3	37	26.8	77	55.8	4.31

N=138

Results show that majority of the respondents strongly agreed that; use of SMS has led to getting notification on project related matters on time (M=4.25), SMS serves as a reminder of any task assigned before the deadline (M=4.35), and social networking has created platforms such as WhatsApp for communication and correspondences among the project team members (M=4.31). Respondents also agreed that; SMS improves time taken to pass information from the sender to recipient due to its efficiency and convenience (M=4.16), email has made drafting letters to relevant authorities easier (M=3.99), use of email has led to increased access in memos (M=3.98), use of email as a channel of communication enhances sending and receiving of mails (M=3.87), and the project manager uses diverse communication channels to facilitate a free flow of information among program stakeholders throughout the program cycle (M=3.81).

Findings imply that various communication channels are used in the projects. Diversity of communication channels facilitate free flow of information among the project team and project stakeholders. However, the most common communication channel is SMS since they are less expensive, fast, and bulk messages can be sent simultaneously to intended recipients. Findings are in agreement with Gamil and Rahman (2023) that reliability and efficiency of the communication enhances effective communication and performance of construction projects. Mulili (2018) also found that using multi-channeled communication approach had cultivated a broad base of interactive opportunities that opened the ability to impact the lives of all stakeholders at different touch points in their organizational.

Communication System

The third objective sought to establish effect of communication system, on sustainability of affordable housing programs in Nairobi City County, Kenya. Respondents were asked to tick on the extent to which they agree/disagree with statements related to communication system. Findings are shown in Table 4.5.

Table 2: Communication System

Statements	SD		D		N		A		SA		M
	F	%	F	%	F	%	F	%	F	%	
There is a system that allows for efficient integration of multiple channels of communication	9	6.5	27	19.6	6	4.3	47	34.1	49	35.5	3.25
The department has adequate telephone line connections to accommodate suggestions from stakeholders	3	2.2	28	20.3	4	2.9	27	19.6	76	55.1	3.95
The department has reliable and fast internet connectivity	6	4.3	6	4.3	10	7.2	38	27.5	78	56.5	4.28
The existing ICT infrastructure enhances efficient running of ICT solutions and service delivery	9	6.5	4	2.9	11	8.0	80	58.0	34	24.6	3.91
Existing infrastructure supports future system upgrade (scalability)	26	18.8	9	6.5	12	8.7	41	29.7	50	36.2	3.58
The staff can access websites to search for information by through of mobile or other internet connections	32	23.2	9	6.5	8	5.8	46	33.3	43	31.2	3.43
The department offers training to the staff whenever there is software or hardware upgrade	40	29.0	51	37.0	14	10.1	10	7.2	23	16.7	2.43
There is induction of new staff on use of ICT resources	60	43.5	24	17.4	5	3.6	13	9.4	36	26.1	2.54

N=138

Findings show that the respondents strongly agreed that department has reliable and fast internet connectivity (m=4.28). Respondents further agreed that; there is a system that allows for efficient integration of multiple channels of communication (m=3.25), the department has adequate telephone line connections to accommodate suggestions from stakeholders (m=3.95), the existing ICT infrastructure enhances efficient running of ICT solutions and service delivery (m=3.91), existing infrastructure supports future system upgrade (scalability) (m=3.58), and the staff can access websites to search for information by through of mobile or other internet connections (m=3.43). Respondents disagreed that the department offers training to the staff whenever there is software or hardware upgrade (m=2.43), and there is induction of new staff on use of ICT resources (m=2.54).

Findings imply that the project managers have adopted technology in project implementation. They have ensured that the project team have access to internet which is also reliable. This enables the project team access websites search for information that helps them to improve quality of projects. The technology infrastructure in the program enhances easier and faster communication. The project team is however rarely trained on ICT. They may therefore lack the ability to use information systems which is very essential in the current technology innovations. Findings agree with Kibet, Mugo, and Nassiuma (2023) that communication flows ware critical to successful project implementation. Mugo (2018) also revealed that availability of information and transparency to all participants during the project, increases synergy and appropriate communication channel ensure that information is relayed to right audience and improved team coordination and increased synergy and trust.

Sustainability of Affordable Housing Programs

The managers were asked to tick on the extent to which they agree/disagree with statements related to sustainability of affordable housing programs. Findings are shown in Table 4.7.

Table 3: Sustainability of Affordable Housing Programs

Key: SD=Strongly disagree, D=Disagree, NS=Not Sure, A=Agree, SA= Strongly agree, M=Mean.

Statements	SD		D		N		A		SA		M
	F	%	F	%	F	%	F	%	F	%	
All the applicants benefit from the affordable housing	40	29.0	61	44.2	5	3.6	15	10.9	17	12.3	1.87
The beneficiaries are able to meet all social needs after relocation	50	36.2	45	32.6	13	9.4	27	19.6	3	2.2	1.81
The living standards of beneficiaries change after relocation	12	8.7	24	17.4	6	4.3	56	40.6	40	29.0	3.64
The environment of the affordable housing is more eco-friendly	6	4.3	12	8.7	3	2.2	38	27.5	79	57.2	4.25

N=138

Findings show that respondents strongly agreed that the environment of the affordable housing is more eco-friendly (m=4.25), they further agreed that the living standards of beneficiaries change

after relocation (m=3.64). Respondents disagreed that all the applicants benefit from the affordable housing (m=1.87), and the beneficiaries can meet all social needs after relocation (m=1.81). Findings imply that although the housing programs improve the living standards of the beneficiaries, the beneficiaries are not able to meet all social needs after relocation.

Correlation Analysis

The study used Pearson Correlation in order to measure the strength and the relationship between project communications and sustainability of affordable housing projects. A correlation value of ± 0.5 shows a strong correlation, ± 0.30 to ± 0.49 moderate correlation while ± 0.29 is a weak correlation. Significance is less than α=0.05. Correlation findings are presented in Table 4.

Table 4: Coefficient of Correlation

Variables		Program sustainability	Communication channel	Communication system
Program sustainability	Pearson Correlation	1		
	Sig. (2-tailed)			
Communication channel	Pearson Correlation	.456**	1	
	Sig. (2-tailed)	.000		
Communication system	Pearson Correlation	.625**	.794**	1
	Sig. (2-tailed)	.000	.000	

** . Correlation is significant at the 0.05 level (2-tailed).

According to findings in Table 4, There is a moderate significant relationship communication channel and program sustainability (r=0.456, p=0.045). Findings agree with Achar, Chebii, and Mugo, (2021) that there is a significant relationship between communication channel and project implementation. There is a strong significant relationship between communication system and program sustainability (r=0.625, p=0.000). Findings concur with Mmbughu (2015) that there is a strong relationship between project communication systems and the quality of project.

Regression Analysis

Regression analysis was conducted to understand how a unit change in the independent variable may cause a change in the dependent variable. The coefficient of determination shows how a statistical model is expected to predict future results. Table 5 presents the Model Summary.

Table 5: Model Summary

Model	R	r ²	Adjusted r ²	Std. Error of the Estimate
1	0.878	0.782	0.768	.754

Predicators: (constant)

Communication channel, Communication system

The results show that adjusted R squared was 0.782 implying that there was 78.2 % changes on sustainability of affordable housing programs due to the changes in communication channel, communication system. This means that other project communication management practices that this study did not focus on contribute to 21.8% of firm performance.

Table 6: Analysis of Variance

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	152.095	4	22.426	38.800	.000 ^b
	Residual	46.015	123	.578		
	Total	198.110	127			

Predicators: (constant) Communication channel, Communication system, Program sustainability

F-ratio in the ANOVA table tests whether the overall regression model is a good fit for the data. The table shows that the project communications management (communication channel, communication system) statistically significantly predict changes in sustainability of affordable housing programs, $F(4, 123) = 38.800, p < .0005$ (the regression model is a good fit of the data). The significance value of 0.000 indicates that the regression relationship is highly significant in predicting how project communications management would cause changes in sustainability of affordable housing programs.

Table 7: Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
Constant/Y Intercept	3.486	110		3.850	.000
Communication channel	.580	.234	.234	2.440	.011
Communication system	.873	120	.730	7.642	.000

As per the SPSS generated in Table 7,

$$\text{Program sustainability} = 3.486 + 0.580 (\text{communication channel,}) + 0.873(\text{communication system})$$

The regression results show that holding communication channel, communication system, at constant zero, sustainability of affordable housing program will be at 3.486. Communication channel is statistically significant to sustainability of affordable housing program ($\beta = 0.580, t=2.440, P = 0.011$). This shows a unit increase in communication channel will result to increase in sustainability of affordable housing program. Communication system is statistically significant to sustainability of affordable housing program ($\beta = 0.873, t=7.642, P = 0.000$). This shows that that a unit increase in communication system will result to increase in sustainability of affordable housing program.

Conclusion

Communication channel affect project performance. Some communication channels are effective while others are not. Short messages are the most preferred form of communication among the project team. Others include face to face communication, printed (memos), and internet based communications. Effective communication channels ensures that project information is effectively shared among the project team and stakeholders. Adoption of an suitable communication channel helps to prevent information distortion and the right message gets to the right person. The choice of the right communication channel and appropriate communication tools are key ingredients in ensuring effective communication delivery in program sustainability.

Effective communication systems affect program sustainability. ICT infrastructure enables effective information sharing among the project team. Communication systems enhance quick feedback on inquiries from program stakeholders. The speed of getting feedback on inquiry

enables the program managers to fasten the program activities and save on project delivery timelines. Reliability of information systems is also essential since ensures that smooth flow of information. Ease of use also determines whether the project team will use the information systems to rely on program information. There is however poor training on use of information systems.

Recommendations

Program managers and supervisors should have a strong communication channel to help them ensure that there is flawless communication among the project team and the program stakeholders. The managers should adopt communication channels that are easily accessible by the intended recipients. SMS could be best suited for short messages since they are delivered promptly and feedback is almost immediate. Short messages would also reduce misinterpretation of information since the message passed is clear and precise. Social media platforms should also be monitored closely to ensure that only network relevant information is communicated, and that confidential information is secured to avoid exposure by malicious staff.

The government should invest in an effective information communication management system to promote effective integration of information and feedback from all the channels of communication. Project managers should integrate appropriate communication flows in their management to help them when computing project plan and detailing how to communicate with various stakeholders.

Areas for Further Study

A similar study in other programs implemented by the government in Kenya

A study focusing on other project communication management practices which causes 21.8% variance in program sustainability.

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