EFFECT OF PROJECT PLANNING PRACTICES ON THE PERFORMANCE OF DAIRY CATTLE PROJECTS IN RWANDA: A CASE OF RWANDA DAIRY DEVELOPMENT PROJECT, IN MUSANZE DISTRICT (2018-2020)

Masengesho, J. C., Dushimimana, J. D., & Bihira, A. M.

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[1] Masengesho, J. C., [2] Dushimimana, J. D., & [3] Bihira, A. M.

[1] Research Scholar, MBA Project Management, University of Kigali, Musanze, Rwanda
[2] Doctor, Full Time Lecturer, University of Kigali, Musanze, Rwanda
[3] Research Associate, B & B Research Sourcing Inc. and Student, University of Kigali, Musanze, Rwanda

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ABSTRACT

*This research assessed the impact of procedures for planning a project have on the performance of dairy projects in Rwanda. In particular, the study aimed to: (a) assess the impact of human resource planning on the performance of the RDDP; (b) assess the effect of financial planning on the performance of the RDDP; (c) assess the effect of material usage planning on the performance of the RDDP; and (d) evaluate the impact of time planning on the performance of the RDDP. To realize these goals, the study adopted a descriptive research design using quantitative methods and targeted 328 project personnel in the RDDP, Musanze district. The sample size included 77 randomly selected respondents. Structured questionnaires and documentary reviews were used to collect data, which was then analyzed using frequencies, means, standard deviations, and regression analysis. Findings revealed that the HR department is always included in the procedures of planning the projects, and the project has enough skilled staff (Mean = 3.65), the project personnel are given adequate pay as an incentive (Mean = 4.01), and they have sufficient funding. Graduates to do their job (Mean = 3.89) are regularly trained to improve their skills (Mean = 3.99). Project costs were accurately and accurately (Mean = 4.36) and the project budget was properly determined and allocated to activities (Mean = 3.87). Project funds were disbursed on time for tasks of the projects (Mean = 3.89) and budgeted funds were sufficient to complete the project on time (Mean = 4.32). Project costs were kept for all project phases (Mean = 3.68), and managers tracked the performance of project allocated resources (Mean = 3.98). Tasks of the projects are well defined in the planning stage of the project (Mean = 3.78), schedules are developed in the planning stage and followed in all phases (Mean = 3.78), there is extensive use of resource calendars for all work (Mean = 4.05), the duration of all work is well balanced and accurately (Mean = 3.62). Findings showed that there is a positive and significant correlation between human resource planning (r =.527, p-value =.000< .05), financial planning (r =.805, p-value =.001<.05), material usage planning (r =.547, p-value =.002,.05), time planning (*r =.673; p-value =.011<.05) *and the performance of projects. Overall, there was a strong correlation between project planning procedures and project performance (R = 0.787), and project planning practices account for 62.7% of the variation in project performance (adjusted at R square =.627). The study concluded that effective planning practices are important in enhancing the realization of the project outcomes within time, quality and cost constraints and provide value for money to the beneficiaries.*

Key words: *Project, planning, time planning, financial planning, material planning, performance, RDDP, dairy cattle projects*

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INTRODUCTION

Planning in project management is a crucial element to realizing project results as it is an ongoing process during project delivery (Idoro, 2012). James (2014) reported that proper planning is an essential factor for the efficient realization of the projects' objectives. The process and activities implicated in the identification and setting of other policies and procedures for achieving tangible results are known as project planning (Al-Kaabi, 2011). Project planning is a very important aspect in developing a good structure that enables the project team to make better use of the necessary resources (Szopik *et al.,* 2016). On the other hand, the performance of projects is the ability to realize results within the constraints of schedule, scope, budget, and quality (Stevens, 2016). Takim *et al.* (2013) viewed the performance of a project as the ability to realize the project outcomes at an authorized cost and time and to produce desired results that meet the users' specifications for quality and value. Atkinson *et al.* (2009) reiterated that the performance of projects is achieved once all stakeholder interests have been fully realized and can be sustained in the future.

Different scholars have attributed the performance of projects to proper planning practices. For instance, Cooke-Davies (2002) of 136 European projects executed between 1994 and 2000 by 23 organizations demonstrated a strong correlation between schedule delay and cost escalation. Price Waterhouse Coopers (2012) showed that 86% of projects failed to deliver against their budget, schedule, scope, quality, and benefits baseline due to poor planning and stakeholders' analysis. Haron *et al.* (2017) assessed the project planning practices and their influences on the performance of construction projects in Malaysia and indicated that clients' satisfaction and the competencies and skills of the project personnel are the keys to project quality and performance. Paulo *et al.* (2014) assessed the essential performance factors contributing to the performance of projects in the energy sector projects in Brazil and demonstrated that clear definitions of scope, managers' competencies, and proper allocation of resources are essential towards the performance of projects.

Buba and Tanko (2017) evaluated the practices of planning in projects and their influence on the project quality aspects in the construction sector in Nigeria and showed that the manager's leadership style and his ability to direct tasks of the projects are imperative towards project quality performance. Similarly, Yang *et al.* (2011) demonstrated that managers' leadership enhances team relationships and teamwork, which in turn statistically influences the performance of projects. Lemma (2014) assessed the practices of planning in projects and their influence on the performance of projects and found that people, planning, technological, and managerial aspects are the main factors influencing the performance of projects of construction firms in Ethiopia.

Ngure (2013) examined the determinants of the performance of livestock projects in Kenya, taking into consideration the East African context. He found that failures in project planning and inadequate management of change have a negative impact on the project execution and the performance of the projects. Njoka and Omwenga (2019) evaluated project planning practices and their influence on project execution of construction projects in Kenya, concluding that resource

planning, monitoring and control, communication, and management support are all critical to the success of project execution. Nyawira *et al.* (2018) found that planning is critical and has a considerable impact on the performance of community-based programs in Kenya. Kakili (2017) looked at the factors that affect the performance of airport construction projects in Tanzania and found that delays in fund release result in cost overruns and project delays.

Over the last several years, certain projects in Rwanda have also shown signs of worry. The government of Rwanda, for example, spent $600 on a development project at Bugesera International Airport in 2011, with a completion date set for 2016. However, the project has yet to reach its target completion date (Nyasetia, 2016). Increasing public investment on livestock projects in Rwanda is an essential economic growth stimulant, as seen by the rise in public expenditure on development projects in this sector, which now accounts for 44.7 percent of the country's overall budget (Ministry of Finance and Economic Planning [MINECOFIN], 2014). Another problem is that dairy cattle projects have been hampered because of high project costs, delays in finishing projects on time, and a lack of acceptance by stakeholders or end users after the projects are done.

Problem Statement

Rwandan agriculture has achieved amazing strides over the previous decades, accounting for 35% of GDP and being the primary engine of economic development (7.6%) and poverty reduction (35% of the entire decline in poverty rates over the last decade) (Food and Agriculture Organization [FAO, 2018]. Despite these encouraging achievements, Rwanda has not yet attained its full output capacity, with agricultural and animal production capacities having peaked in 2011. They are now projected to be operating at roughly 40% to 50% of their production capacity, indicating continued inefficient use of production factors. Moreover, animal output has continually been poor throughout time. Dairy cattle projects contribute significantly to economic expansion and poverty alleviation, accounting for 15% of livestock gross domestic product and 6% of total GDP. The country currently has 1.33 million cattle, 28% of which are improved dairy cows that produce 82% of total milk output (MINAGRI 2018).

However, the failure rate of projects in this sector in Rwanda is high, as are the expenditures associated with launching and operating them (Institute of Policy Analysis and Research [IPAR, 2018). For instance, the Rwandan government got a $120.05 million loan from EXIM Bank in 2013 to implement export-oriented irrigation projects on 7, 000 hectares in Kirehe district. However, the Auditor-Report General's (2020) highlighted that this project was not completed in March 2020, seven months beyond the planned completion date. Similarly, the Rwanda Agriculture Board (RAB) inked a $16.5 million contract in 2017 with a joint venture of OM Metals and SPML to build irrigation and improve watersheds in the Mpanga Sector, with completion expected in March 2020. However, the Auditor-Report General's (2020) said that the project had completed 72.8 percent of the project activities as of March 2020 (MINAGRI, 2018). Due to poor planning for the seasons and climate, most livestock projects are either late and over budget, or left unfinished with no one to blame.

In Musanze District, one of the districts in the Northern Province, situated in northwest Rwanda's highlands, agriculture employs more than 91 percent of the region's population. Musanze is classified as a national food reserve. Moreover, livestock, along with crops, is a significant source of revenue and fodder for animals. However, according to the Auditor-Report General's (2020), 18 of the 59 projects undertaken during the last decade are accomplished as of 2020. Jorgensen and Grimstad (2018) acknowledge that a measurement failure at the planning stage of a project, such as neglecting specified schedules and budgets, can damage the project's performance. Numerous building projects in Rwanda face a variety of prices and delays in completion.

Despite the critical role of project planning in project performance and the existing problems coupled with project performance, a dearth of studies is noticeable on the effect of project planning on the performance of dairy cattle projects in Rwanda. Existing research has placed a premium on a variety of topics. Watchtower et al. (2018) looked into the impact of project personnel skills on IFAD-funded projects in Rwanda; Umulisa et al. (2015) looked into the impact of resource planning on project performance; and Amatory and Mulyungi (2018) looked into the impact of employee project management skills on the performance of government-funded projects in Rwanda: the Haguruka Dukore Project in the Nyarugenge District. However, most of these studies focused on determining the reasons for construction project delays and were conducted independently of Rwanda's dairy projects. Moreover, local studies often concentrate on energy-related projects or project personnel planning, with little emphasis on livestock-related initiatives. Therefore, this research studied the effect of project planning on the performance of dairy cattle projects in Rwanda based on the Rwanda Dairy Development Project (RDDP).

Research objectives

The main purpose of this study was to examine the effect of project planning practices on the performance of dairy cattle projects in Rwanda. Specifically, the study aimed:

- To determine the effect of human resource planning on the performance of RDDP in Musanze district
- To examine the effect of financial planning on the performance of RDDP in Musanze district
- To evaluate the effect of material planning practices on the performance of RDDP in Musanze district
- To establish the effect of time-planning practices on the performance of RDDP in Musanze district.

LITERATURE REVIEW

Human Resource Planning

Projects often have many different purposes, involving many internal and external actors, and are performed in different fields of work. Human resource planning involves the processes used in project organization and is established to provide the project with the best possible conditions for performance (Taylor, 2006). Human resource planning involves the formation of teams, their development, and management (PMBOK, 2004). Al-Maghraby (2008) stated that managers should first design how the project's staff would be structured and identify the responsibilities that will be necessary.

Dvir *et al.* (2003) established that personnel planning procedures link individual talents to organizational processes, which are often employed as a component of firms. This consists of three components: (1) a culture that communicates values, principles, norms, and practices; (2) an organizational structure that defines the roles and responsibilities of the organization; (3) a human resource plan that defines the skill levels, personnel capacity, and management capacity of the organization; and (4) human resource plans that define people-centered approaches to strategy implementation, such as staff selection, communication, training, compensation, and career development. According to Bratton and Gold (207), staff planning is a planned procedure that involves forecasting workers' futures and allocating their abilities to specific roles to accomplish the organization's goals and objectives. Werner and De Simone (2006) stressed the importance of labor planning in enabling enterprises to forecast how and when changes in the labor market will affect their labor requirements. Therefore, every business that wants to keep up with the rapidly changing working environment and labor markets needs to plan for the future.

Motivating workers with an effective incentive system is a difficult endeavor since it has the potential to improve employees' work ethic and

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raise their dedication and performance. Armstrong and Murlis (2007) suggest that award strategies are a vital part of a firm's human resource management, working in tandem with other human resource procedures to complement and reinforce one another. Bratton and Gold (2007) proved that motivation for a positive reward system may result in greater worker productivity. Profit sharing, according to Kalleberg and Moody (2004), is a way for businesses to become more competitive by integrating their employees and businesses and making them work harder at their jobs, which leads to better project performance.

Many researchers have acknowledged that human resource planning has a significant influence on project success across the globe. For instance, Huang (2009) found that HR planning had a positive impact on the performance of the Nigerian construction projects. Armstrong and Murlis (2014) showed that awards and compensation plans should be combined with other critical HR initiatives to reinforce and improve organizational performance. Werner and De Simone (2016) also showed that human resource planning is critical to every company's ability to achieve its organizational objectives in a continuously changing labor market in Malaysian building projects. Wambua (2013) assessed the impact of personnel characteristics on project success in Kenya's capital, Nairobi and demonstrated that performance evaluation, capacity development, and the presence of qualified employees are vital to project planning and increasing project performance, and concluded that staffing qualities promote project success in Nairobi County.

Financial Resource Planning

Planning of financial resources for the project is linked to the estimation of the budget and expenditures for the project. The achievement of project goals is dependent on the successful completion of this step, which has an impact on all project phases (PMBOK, 2004). Cost planning guarantees that projects are executed within the limits of the agreed budget. The cost of various projects is crucial, and it is monitored by considering the various functional packages inside the projects (Guoli, 2010). Antvik and Sjöholm (2010) proposed that cost estimates be based on the scope of the project, the work class structure, and the intentions for the project. Adisa *et al.* (2010) also showed that each task should be based on individual work circumstances to achieve accurate estimations and have a predetermined amount for those actions that are potentially dangerous and lack thorough information to operate as a safeguard against the possible dangers. Specifically, Ofori (2013) pointed out that effective balance and budgeting, as well as the flow of projects over a period of time, are required for financial resource planning. Managers must also develop estimates of prospective financial requirements in a range of conditions and devise contingency plans for the worst-case scenario. Chen (2011) underlined the need for allocating appropriate funds to activities to fulfill project goals as effectively as possible. Jackson (2010) found that financing for all stages of a project is important to a project's success.

Numerous studies have attempted to evaluate how financial resource planning affects project success for a variety of projects all around the globe. For example, Guoli (2010) studied the impact of budget planning methods on project performance of construction projects in Kenya and showed that project costs can be controlled and cash flow can be maintained with a well-executed and efficient budget. Guoli (2010) also showed that in the absence of enough project funding, project quality problems, delays, and cost overruns are likely to occur, and the project's performance is at risk and confirmed that effective budget planning has been shown to boost the performance of projects.

Karlsson (2011) investigated the impact of financial resource planning on the success of manufacturing ventures in Sweden and confirmed that there is a strong correlation between project efficiency and financial state and education, since managers are responsible for allocating resources throughout the

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project's lifecycle. Kogi (2013) explored the influence of financial resource planning on the performance of building projects in Nairobi County and showed that sufficient and timely financing is critical to the success of a construction project. Furthermore, the financing for the project must be made available in a timely manner to reduce the likelihood of delays and cost overruns, and funds should be adequate to achieve the project's goal and confirmed that budget planning and management and budget analysis helped companies achieve their project goals and increase project performance. Umulisa *et al.* (2015) evaluated the impact of resource planning methods on the project's performance with a case of Agaseke Project in Rwanda and the results showed that financial planning, such as emergency planning, budget management, and cash flow analysis, is critical to enhancing project success. Moreover, the budget planning and budget management activities have helped companies prioritize jobs and govern project flow. The study also found that Agaseke projects in Rwanda are more efficient when they are planned in advance.

Material usage Planning

Material planning, according to Gulghane (2015), includes measuring the material, arranging and planning the material, and activities to be done on it. Kasim *et al.* (2005) show that suitable planning methods encourage high productivity and result in high-level performance of projects when implemented correctly. Following approval, a request for material procurement must be filed (Low, 2014). Activities and processes for the acquisition of construction materials must be carried out in a uniform way across the organization (Rivas *et al.,* 2010). Selection of material is beneficial in mitigating the negative impacts of delays and a lack of sufficient content. The materials vary relative to their physical and chemical qualities, as well as their functional and independent resource management systems, storage procedures, and control systems. Project planning, on the other hand, helps to make sure that the project runs smoothly (Karim & Ern, 2014).

Furthermore, asset management is critical to keeping project expenses under control. Poor planning, procurement, asset management, and performance are all factors that contribute to material waste (Calkins, 2009). Asset management is critical in reducing material waste, deficiencies, and residues and ensuring that the appropriate level of material assets is always maintained (Said & El-Rayes, 2012). Furthermore, a lack of regard for time in planning results in recycling and extended usage and material use, both of which raise expenses. Project quality elements are jeopardized due to a lack of enough assets. However, the asset must be of sufficient quality in accordance with the project specifications.

Diverse researchers assessed the influence of material planning on the overall success of projects. Plenert and Best (2012), for example, looked at the influence of material quality on the efficiency of building projects in Kenya and found that it had a negative impact and the results revealed that enterprises benefit from just-in-time asset management procedures relative to the effective allocation of building materials for construction objectives and cost reductions in asset management operations. Kress (2014) examined the planning procedures and their impact on the efficiency of building projects in London and the findings showed that the primary purpose of project employees is to meet or surpass the expectations of sponsors relative to outcomes, expenses, and the overall project. Findings also showed that adequate planning allows project staff to avoid asset losses, cut inventory expenses, and finish work on schedule and confirmed that there is a strong connection between planning materials and project performance. Telsang (2014) investigated the influence of project planning practices on the performance of projects in India and the results showed that the planning procedures comprised a description of the activities; the cost and time estimates; and

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important operational events that would allow the project staff to operate efficiently and completely meet the project goals and confirmed that there is a strong connection between planning for materials and the project performance.

Time Planning Practices

Project time planning includes all of the processes that must be followed to guarantee that goals are met on time. Job descriptions, sequencing, resource assessment, length, and planning are some of the procedures involved in this process (PMBOK, 2004). Planning is a critical component of the project schedule, and it must be founded on a more robust demolition framework to be effective. Antvik and Sjöholm (2007) say that getting the order of work right is very important when making realistic and believable timetables for any organization. Guoli (2010) pointed out that the sequence of tasks requires the identification of reasonable links and interdependence between the activities and between the different roles of a project. Antvik and Sjöholm (2007) indicated that resource assessment entails identifying which resources can be used and how much of each resource could be used over a certain period of time. The projected time of work should be determined by considering the scope of the project, the kinds of resources that will be needed, the estimated number of resources, and the availability of resources. The outcome of the process is then utilized to enhance scheduling. In order to get an accurate estimate of how long an activity will take, Antvik and Sjöholm (2007) say that someone who knows about the activity should do the estimate.

PMBOK (2004) highlighted that to produce a well-functioning plan, it is preferable to emphasize a critical set of activities, and that the weaknesses of this plan are then utilized to allocate project resources efficiently. There are two techniques for measuring resources, both vertical and horizontal, and they are as follows: Top-down approaches are used when there is only a limited understanding of what each job entails, and they take into account the project managers' previous experience with similar projects. The top-down approach is used when there is a lot of information about each project and job category available.

There have been a number of attempts to investigate how efficient time planning influences the performance of projects all around the globe. For example, Akpan and Chizea (2012) investigated the elements that influence time plans in the Nigerian construction industry, and the findings indicated that time management plans for chosen projects need to be based on an accurate assessment of how well they work and that if there are deviations from pre-determined standards, corrective action is taken. Using data from Nigeria, Lloyd (2013) investigated the impact of time planning practices on the efficiency of building projects, and the results revealed that the duration of the project completion time was decided by taking into account the length of the project in the task categorization structure. However, since there is uncertainty about the project's efficiency, it is difficult, and in certain situations, it is impossible, to correctly predict the amount of time it will take. Therefore, a thorough exercise is required for time planning to guarantee that control is accomplished and to increase the capacity to identify early deviations. Muute and James (2018) conducted an investigation into the influence of project planning practices on the efficiency of building projects in Kenya's Nairobi County, and the results showed that effective time planning for the projects makes them more efficient and enables them to achieve the project goals on time and within budget and schedule.

Project Performance

Takim *et al.* (2013) demonstrated that the effectiveness of projects is judged by the amount of money spent to achieve the desired goals and the extent to which the needs of the users are satisfied. Budget, time planning, integrity, efficacy, and safety are among the indicators used to evaluate the project's performance. By comparing the project's overall performance to some indicators in the project plan, Vandevoorde and Vanhoucke (2006)

say that the overall performance of the project can be judged. By evaluating whether a project has achieved the anticipated goals relative to cost, time, quality, customer satisfaction, and safety, Atkinson *et al.* (2009) proved that performance assessment could be accomplished. Furthermore, Chua *et al.* (2013) revealed that on-time completion is critical, and their findings imply that the project's staff satisfied all of the needed metrics, including beneficiary satisfaction, while meeting three times the schedule, scope, and cost goals. As previously stated, Cserhati and Szabo (2014) underline that project success can be measured relative to cost, time, and beneficiary satisfaction, all of which are suitable and realistic measures.

Theoretical Review

This study is based on the theory of constraints, resource-based view and the stewardship theory as described in the subsequent sub-sections.

Theory of Constraints

Goldrat and Cox (1992) established the Theory of Constraints (TOC). The TOC proposes that companies be managed efficiently by addressing firm-specific concerns. The idea emphasizes processes and procedures that enhance organizational performance and identifies cost, schedule, quality, and scope as significant hurdles to project success (Kohli & Gupta, 2010). Goldratt and Cox (1992) acknowledge that there are several challenges associated with project performance that are evident in scope, cost, schedule, and information. Managers should identify, analyze, and augment particular resources necessary to address these obstacles. However, resolving these challenges takes a coordinated effort on the part of all stakeholders and service managers, since stakeholders have varying expectations for projects, which may create complications throughout project execution (Eliyahu, 2013). In this study, the TOC is very useful because it reminds everyone who is involved in a project to think about how to deal with issues like costs, schedules, quality, and scope, as well as project plans and policies, and to take steps to avoid problems.

Resource-Based View

The Resource-Based View was first proposed by Barney (1991). RBV hypothesizes that it is a crucial opportunity to have adequate strategic resources for a firm to earn competitiveness over its competitors and enable the firm to have continuous and positive cash flows over time. RBV suggests that for better utilization of firm resources over all the project phases, managers should (i) recognize and categorize the firm's strategic resources, (iii) recognize the prospects for effective usage of the resources, (iv) identify the strategies for better exploitation of the firm's resources, and (v) recognize the gaps in the resources to be filled. In the current study on the effect of project planning practices on the performance of dairy projects, RBV is useful and noteworthy since it stresses the need for resource-based planning to attain competitiveness over rivals. This concept emphasizes the importance of having proper procedures and methodologies in place to optimize the use of a company's strategic resources. Moreover, the RBV indicates that project planning is an important part of the dairy project's overall design.

Theory of Stewardship

Stewardship theory was developed by Donaldson and Davis (1993) to provide a better grasp of the organizations' relationship between project ownership and firm management. In addition to acknowledging that managers are managers and work tirelessly to achieve the maximum possible performance for their enterprises, the idea permits owners to offer assistance and advice to managers and see them as the most trustworthy individuals in their organizations. In accordance with management philosophy, managers serve as resource managers for project resources, and as such, they should be trusted and enabled to make choices concerning these resources. These theories are in agreement, and the proponents of this theory stress the management's concern for high performance and their desire to maximize profits. Managers also have a good idea of how efficient

their company is and can make important decisions (Donaldson & Davis, 1994). Smallman (2004) pointed out that once stakeholders have achieved their goal, managers must also do it. Therefore, managers and teams should share the same interests as owners, and the senior management team should provide specific guidance to the team to ensure effective decision-making on project resources. Davis *et al.* (2007) report that managers who act as project resource managers improve the performance of projects and the satisfaction of the various stakeholders, where all of these stakeholders are brought about by the projects.

Relative to current research, management theory defines the role of managers as project resource managers but also emphasizes their collaboration with project personnel, the senior management team, and/or project owners. It also recognizes that proper staff planning is essential in improving the credibility and effectiveness of decisions made about project resources, as managers would not only increase their profits but also protect project assets, stakeholders, and beneficiaries in achieving the project objective.

Conceptual Framework

Figure 1 illustrates the conceptual framework model of the current study.

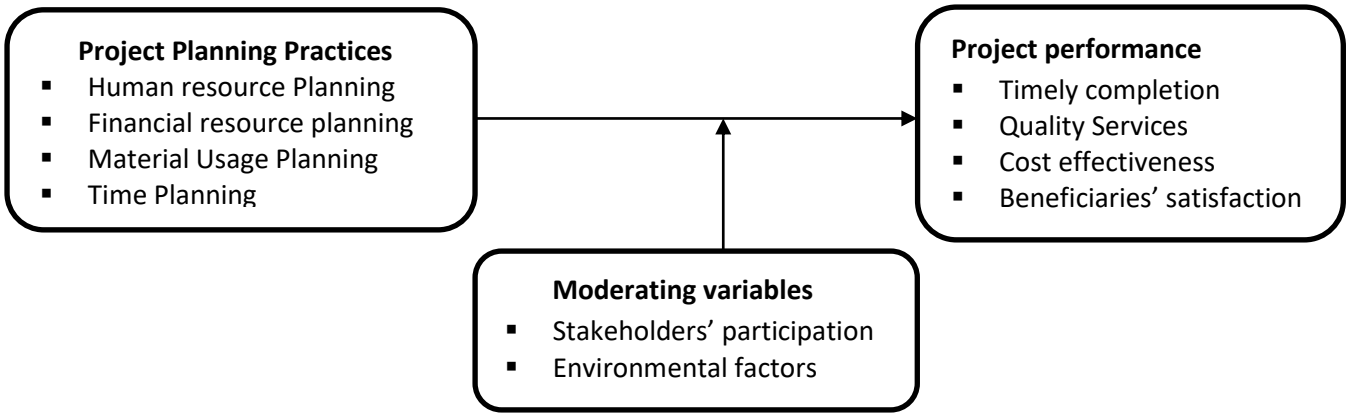

Figure 1: Conceptual Framework

Figure 1 demonstrates that project planning practices is conceptualized as independent variable and is indicated by human resource planning, financial resource planning, material usage planning and time planning. On the other hand, project performance is conceptualized as dependent variable and is indicated by the timely completion of the project, high-quality services, cost-effectiveness and beneficiaries' satisfaction by the project outcomes. Key indicators of project performance are specified in accordance with Baker *et al.* (2004) and Kakili (2017) who emphasized that project performance is measured in terms of its ability to achieve its objectives within the specified constraints of cost, schedule and quality of the outcomes, customer satisfaction and health and safety outcomes. However, the success of the projects is influenced by the external and internal stakeholders' engagement and participation and can be determined by environmental factors such as climate change.

METHODOLOGY

The study adopted a descriptive research design using quantitative methods. The study targeted 328 individuals, including project staff, project leadership, project beneficiaries and stakeholders. Respondents were chosen using random sampling. This procedure enables accurate representation of all targeted human instances in the sample. Each

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phase had a representative sample drawn from its project staff, project leadership, beneficiaries, and stakeholders. The sample size was composed of 77 participants were selected as representative of the entire population. Data were collected by a formal questionnaire to collect data from 77 respondents. Data were analyzed using both descriptive statistics such as frequencies, means, standard deviations, and inferential statistics. Inferential statistics include Pearson's Moment Correlation Coefficient (r), regression analysis, and variance analysis. The Pearson Moment Correlation Coefficient was used to determine the correlation between individual variables and dependent variables, with a confidence interval of 95%. Regression analysis was often employed to ascertain the overall statistical effect of project planning practices on project performance. Correlation coefficient (R) and the coefficient of determination (R^2) were determined using multiple regression analysis the significance of the model was confirmed using F-test statistics from the variance analysis model (ANOVA). Findings were presented using tables.

FINDINGS

Effect of human resource planning on RDDP performance

The study began to assess the impact of human resource planning on the performance of the RDDP in the Musanze district. Respondents were therefore asked to indicate their level of agreement or disagreement in statements relating to human resource planning to indicate whether they apply to the project and how it has an influence on its performance. Responses were summarized by mean and standard deviation (SD). Table 1 below presents the findings.

Table 1: Descriptive statistics on Human Resource Planning and performance of RDDP

Statements	Mean	SD
HR department is always included in the procedures of planning the projects	4.05	.387
The project is adequately staffed with competent project personnel	3.65	.221
Managers of project's experience are important for performance of projects	3.98	.191
Project personnel are given adequate remuneration as a motivation factor	4.01	.267
Project personnel have adequate qualifications to discharge their tasks	3.89	.214
The project personnel undergo regular training to enhance their skills	3.99	.210
Managers participated in the planning stage	3.78	1.21
Effective Human resource planning improve the performance of projects	3.99	.147

Table 1 showed that a significant proportion of participants (Mean = 4.05. =.387) agreed that the human resources department should always be included in the project planning practices and that the project should have competent project employees (Mean = 3.65, SD. =.221). Moreover, a sizable proportion of participants (Mean = 3.98, SD =.191) supported the argument that project management skills are critical to project performance and that project personnel receive adequate compensation as a motivating factor (Mean = 4.01, SD =.264), project personnel possess sufficient qualifications to perform independent tasks (Mean = 3.89, SD =.214), and project personnel receive ongoing training to improve their skills (Mean = 3.99, SD =.210). However, a significant proportion of respondents (mean = 3.78, SD = 1.21) disagreed on whether managers were involved in the planning process. Finally, a significant proportion of participants (Mean = 3.99, SD =.147) agreed with the claim that good human resource planning increases the performance of the project under study. Therefore, this demonstrates that human resource planning programs are efficient in this process by examining the department of labor involved in project planning, hiring sufficient project staff, hiring experienced managers and qualified project staff, providing

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regular training to project staff, and compensating them adequately for their efforts, which results in increased project performance.

These findings corroborated with the findings of Batt (2002) who asserted projects that place a high premium on advanced training and skill development, management engagement in decision-making and project planning phases, and project staff incentives would provide better and more acceptable outcomes. Moreover, the data indicated that skills, credentials, and talents had a beneficial effect on project performance. Kaniaru (2014) corroborated these results and stated that manager power has an effect on project and technology performance; communication skills and management expertise boost project performance. Moreover, the present findings reveal that project personnel are continually taught to enhance their operational abilities and capacity to complete assigned duties and assure project success. This is consistent with the results of Carbone and Gholston (2014), who established that coaching project people enhances their skills, project management abilities, and the performance of projects. Karoki (2013) has shown that when a project's team is well-structured and dedicated to achieving project goals, project people skills have a beneficial effect on project performance.

Effect of financial resource planning on the performance of RDDP

The study also wanted sought to examine the influence of financial resource planning on the performance of RDDP in Musanze district. Hence, respondents were asked to show views on the statements related to financial resource planning to demonstrate whether they are applicable in this project and how they influence its performance. Responses were summarized by Mean and SD. Table 2 below depicts the results.

Table 2: Descriptive statistics on financial resource planning on the performance of RDDP

Statements	Mean	SD
Project costs were accurately estimated in the planning stage of the project	4.36	.871
The budget for the project was properly determined and allocated to activities	3.87	.236
Project' funds are timely disbursed to perform project tasks	3.89	.321
Budgeted funds were enough to complete the project on time	4.32	.378
The costs of the project were maintained in all project phases	3.68	.214
Books of accounts of the project were maintained accurately	3.76	1.265
Managers track the performance of resources allocated to activities	3.98	.241
Effective financial resource planning enhanced the performance of projects	4.02	.367

Table 2 showed that a significant proportion of participants (Mean = 4.36, SD =.871) agreed that the project's cost was accurately and efficiently estimated during the planning stage and that the project's budget was correctly established and allocated to activities (Mean = 3.87, SD =.236). Moreover, a sizable proportion of respondents (Mean = 3.89, SD =.321) agreed that project funds were disbursed on a timely basis for project work and that budgeted funds were sufficient to complete the project on time (Mean = 4.32, SD =.378), that project costs were retained throughout the project's phases (Mean = 3.68, SD =.214), and that managers monitor the performance of resources allocated to project tasks (Mean = 3.98, SD =.213) However, a significant proportion of participants (Mean = 3.76, SD = 1.265) could not agree on whether project accounting records were kept appropriately. Finally, a significant proportion of participants (Mean = 4.02, SD =.367) agreed with the premise that competent financial resource planning increases the performance of the Musanze region's RDDP project. Therefore, this proved that the project under consideration had sufficient

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financial planning mechanisms in place to reflect the project's cost and budget estimations and to monitor the performance of the resources allotted to the project's different activities. This has increased the performance of all projects relative to performing duties and finishing projects on time and within budget constraints. Therefore, procedures such as budget planning, forecasting, and revenue generating strategies, and evaluating the effectiveness of financial resources allotted to different project activities were included in the project and may have resulted in enhanced project performance. Besides, effective financial planning guaranteed the effective use of project money and budgets to ensure that project expenses were consistent and maintained throughout the project's life cycle and that funds were released to execute the tasks on time, enabling project staff to avoid delays and overhead costs.

The current findings corroborate with Umulisa *et al.* (2015) who also revealed that good financial planning increases project performance, whereas Guoli *et al.* (2010) indicated that an effective and efficient budget regulates project expenses and ensures a smooth and efficient cash flow throughout the project's lifecycle. Moreover, Gashuga *et al.* (2016) show that low project income has an effect on project quality, leads to delays and cost overruns, and jeopardizes project performance. Furthermore, the results corroborate those of Ochieng (2014), who indicated that measures to monitor and regulate project finances guarantee that money is spent efficiently and effectively, hence improving project performance. Moreover, the results indicated that financial planning ensured the efficient use of project funds and budgets, allowing us to control project costs at all stages and ensure that funds were spent on project tasks without delay, allowing project employees to avoid significant costs and delays associated with project performance. Kogi (2013) found that having enough project help is important for smooth project operations, continuous operations, and minimal interruptions in costs and time, which also improves project performance.

Effect of material planning on the performance of RDDP

The study also wanted to examine the effect of material planning on the performance of RDDP in Musanze district. Hence, respondents were asked to show views on the statements related to material planning to demonstrate whether they are applicable in this project and how they influence its performance. Table 3 below shows the results.

Table 3: Descriptive statistics on material planning on the performance of RDDP

Statements	Mean	SD
Project materials are well communicated in the planning stage of the project	4.15	.682
Sufficient and appropriate materials are provided for performance of projects	4.05	.361
Material costs are accurately estimated and allocated in the planning stage of the project	3.88	.231
Provided materials have the adequate quality to meet their usage	3.79	.148
Materials are procured at a reasonable time	3.78	1.07
There is efficient inventory control over the project materials	3.91	1.17
Project materials are handled with care to ensure their safety and quality	3.87	.214
Effective Material usage planning affects the performance of projects	3.99	.127

Table 3 indicated that a significant proportion of respondents (Mean = 4.15, SD =.682) agreed with the assertion that project assets were well-informed throughout the planning stage and offered adequate and suitable material to ensure the project's performance (Mean = 4.05, SD =.361). Similarly, a sizable proportion of participants agreed that asset costs were accurately estimated and

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distributed during the project's planning stage (Mean = 3.88, SD =.231), that materials were of sufficient quality for their intended use (Mean = 3.79, SD =.148), and that project items were carefully managed to ensure their safety and quality (Mean = 3.87, SD =.214). However, a significant proportion of participants (Mean = 3.78, SD = 1.07) disagreed on whether project accounting records were effectively kept and whether project items were subject to effective performance management (Mean = 3.91, SD = 1.17). Finally, a lot of people (Mean = 3.99, SD =.127) agreed with the idea that functional planning made the RDDP project run more smoothly.

These findings demonstrate that the asset plan is implemented effectively, as evidenced by the quality of communication regarding material requirements during the project's planning stage, the provision of adequate and appropriate assets, the appropriate measurement and allocation of material costs, the provision of high-quality assets, and the use of proper asset holding methods to ensure the adequate quality and safety of project assets. This would result in an increase in project performance relative to quality, cost and schedule. These findings corroborate those of prior research. For instance, the findings support the findings of Abu El-Alkass' (2012) who asserted that ordering is important to identify the size, quantity, and quality of the commodities and the ways of achieving efficient cost management. In addition, the results back up Plenert and Best (2012), who said that material processes help firms allocate building materials for construction and cut the cost of transporting inventories, and Kress (2014), who said that the project would cut property waste, property costs, and finish the project on time.

Effect of time planning on the performance of RDDP

The study also sought to evaluate the effect of time planning on the performance of RDDP in Musanze district. Hence, respondents were asked to show views on the statements related to time planning to demonstrate whether they are applicable in this project and how they influence its performance. Table 4 below indicates the results.

Table 4: Descriptive statistics on time planning on the performance of RDDP

Statements	Mean	SD
Tasks of the projects are well defined in the planning stage of the project	3.78	.267
Tasks of the projects are accurately sequenced before execution	3.67	1.362
Schedules are developed in the planning stage of the project	3.78	.241
There is extensive use of resource calendars at every activity	4.08	.527
The duration of every activity is well and accurately estimated	3.62	.372
The time planning phase considers well-developed Schedules	3.97	.297
Managers are involved in determining project schedules	3.77	1.36
Time planning has enhanced the performance of the projects	3.98	.126

Table 4 demonstrates that a significant proportion of participants agreed with assertions that the project's responsibilities were adequately specified throughout the planning stage (Mean = 3.78, SD. = 0.267). Similarly, respondents agreed that schedules are developed during the planning stage and are adhered to in all categories (Mean = 3.78, SD = 0.241), that resource calendars are widely used for all work (Mean = 4.05, SD = 0.527), and that the majority of respondents agreed that time for all work is well and accurately rated (Mean = 3.62, SD = 372), and that the timeline section considers well-developed schedules (Mean = 3. However, a significant proportion of participants disagreed on whether managers were engaged in developing project schedules (Mean = 3.77, SD = 1.36) and whether project activities were properly sequenced prior to performance (Mean = 3.67, SD =

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1.362). Finally, a sizable proportion of participants (Mean = 3.98, SD =.126) agreed that project scheduling improved project performance. This is an indication that the time planning for the project under study is appropriate, as evidenced by the functional descriptions of the work, the sequence and average duration of the work, and the schedules, and that these elements are adopted to improve project performance relative to scale, cost, and beneficiary satisfaction with project outcomes.

The results verify Lloyd's (2013) argument that efficient time management increases project performance and that time management should be sufficient to guarantee that appropriate deviations are discovered and corrective solutions are ready on time. (2013) also showed that resource planning is a critical component of completing a project efficiently and allocating resources efficiently. Joshi and Patil (2013) highlight that proactive planning assists project staff to minimize future project losses owing to major variations. Telsang (2014) said that scheduling doesn't always work because of unexpected events that happen during a project's execution.

Inferential Analysis

Pearson moment correlation coefficients were used to establish the individual influence of the independent variables on the dependent variable while the multiple regression analysis was used to assess the overall influence of the independent variables on the dependent variable. Hence, the coefficient of determination (R^2), coefficient of correlation (R), and the analysis of variance statistics were obtained to test the fitness of the model. Results are depicted in the following subsections.

Correlation Analysis

To estimate the statistical influence of each study variables on the dependent variable, Pearson moment correlation coefficients were used to establish the individual influence of the independent variables (human resource, financial resource, material usage, and time planning on the dependent variable (performance of dairy cattle projects).

Table 5: Correlation analysis Matrix

Model variables		Performance	Human Resource Planning	Financial resource Planning	material usage Planning	Time Planning
Performance of projects	r	1				
	Sig. (2)					
	n	77				
Human Resource Planning	r	.527*	1			
	Sig. (2-)	.000				
	n	77	77			
Financial resource Planning	r	.805*	.759**	1		
	Sig. (2-	.000	.000			
	n	77	77	77		
Material Usage Planning	r	.547	.304**	0.271	1	
	Sig. (2-)	.02	.027	0.091		
	n	77	77	77	77	
Time Planning	r	.673*	.547**	.527**	.468**	1
	Sig. (2-)	.011	.037	.021	.032	
	n	77	77	77	77	77

** Correlation is significant at 10% level (2-tailed)

*Correlation is significant at 5% level (2-tailed)

Table 5 indicated that there was a statistically significant and strong connection (r =.527, p-value =.000<.05) between staff planning and project performance throughout the period under consideration. It is an inference that if the efficacy of human resource planning is enhanced, the performance of the project will be improved in the same way. Therefore, in order for any dairy project to be successful, it is necessary to have project staff that were effective, efficient, and competent. For the reason that project staff utilizes and executes the activities associated with projects, ensuring that they are completed on time and within budget, this is the case. Table 5 further demonstrates that there was a positive and statistically significant correlation between financial resource planning and the performance of the project under considerations (r =.805, p-value =.001<.05). Therefore, project performance, both relative to time and money, and the quality of project deliverables, would likely increase if realistic cost and budget estimation and monitoring of resource performance were carried out for the different activities associated with the project.

Furthermore, there was a positive and statistically significant correlation (r =.547, p-value =.002<.05) between the material usage planning and the performance of the project under considerations. This includes effective communication of important project requirements to project staff, the use of high-quality materials, the proper measurement and allocation of material costs, and the use of material management procedures that can improve project performance in terms of quality, cost and timeliness. Finally, time planning and the effectiveness of the research project were shown to have a statistically significant and strong link (r =.673; p-value =.011<.05). This implies that positive changes in time management methods related to effective job descriptions, task sequences, accurate time planning, and timetable improvement will result in a balanced change in the performance of projects throughout their durations.

Regression analysis

Multiple regression analysis was used to establish and determine the overall influence of the independent variables on the dependent variable. Tables in the following paragraphs portray the results.

Table 6: Regression Model Summary

Model	R	R Square	Adjusted R Square	Sign'.
1	.787	.677	.627	.001

a. **Predictor (s): (**Constant), human resource, financial resource, material and time planning practices

b. **Dependent variable:** Performance of projects

Table 6 showed that R was 0.787. This demonstrates that there is a strong and positive correlation between project planning practices and the performance of the investigated projects. This implies that every improvement in project planning practices will result in an increase in project performance. The coefficient of determination (adjusted R square) was.627 in all other respects. This implies that 62.7 percent of the variation in project performance can be attributed to human resources, financial resources, material resources and time planning practices adopted by the project team and stakeholders. Furthermore, the significance level was.0010.05, showing that project planning practices are a critical component of project performance. This implies that efficient and effective project planning might result in the efficient operations of dairy projects and the realization of the project outcomes. These findings are corroborated by Mkutano (2018) and Ngundo and James (2018), who demonstrated a strong and significant association between project planning practices and project performance.

Table 7: Analysis of variance

	Sum of Squares	DF	Mean Square	F	Sig.
Regression	12.897	4	3.2224	51.477	.000
Residual	4.197	67	.063		
Total	17.094	71			

a. **Predictor (s): (**Constant), human resource, financial resource, material and time planning practices

b. **Dependent variable:** Performance of projects

Table 7 showed that the F-value=51.477 and p-value=.000. This implies that the specified regression model is statistically significant and well fitted. This demonstrated that the selected study variables (human resource, financial resource, material, and time planning practices) are joint predictors of the dependent variable (performance of Dairy Cattle Projects) and the data parameters are ideal for making a conclusion about the study variables.

Table 8: Regression Model Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t.	Sig.
	B	Std Error	Beta		
Constant	.367	.018	-	1.274	.000
Human Resource Planning	.147	.073	.169	2.413	.008
Financial Resource Planning	.394	.095	.582	4.163	.000
Material Planning	.308	.148	.897	2.184	.041
Time Planning	.206	.098	.173	2.617	.002

a. **Predictor (s): H**uman resource, financial resource, material, and time planning practices

b. **Dependent variable:** Performance of projects

Considering the results in table 8 the specified regression model would be re-written as follows:

$$Y= .367+ .147X_1+ .394X_2+ .308X_3+.206X_4+.218X_5+e$$

Based on the aforementioned and setting all other variables to zero (human resource, money resource, material, and time planning practices), the performance of dairy cattle projects would be.367. Moreover, the coefficients for human resource planning were =.147 and the p-value was =.048, respectively. This shows that increasing the unit of human resource planning procedures by.147 units would result in a comparable rise in the performance of dairy projects. These results support those of Armstrong and Murlis (2014), who demonstrate that human resource planning has a significant impact on project performance. Furthermore, findings indicated that the financial resource planning coefficient was equal to.394 with a p-value of.000. This implies that a change in the unit of budgeting procedures may result in a commensurate change in the functioning of the Dairy Cattle Projects of 394 units. This is consistent with Antvik and Sjöholm (2013), who also emphasized the need for project cost management to keep the project budget on track and to prevent cost overruns and financial planning from negatively impacting the performance of projects. According to the results, the asset adjustment coefficient was equal to 0.308 and the p-value was equal to 0.041. It implies that a change in the way a unit uses planning procedures may result in a change of 308 units in the way the Dairy Cattle Project operates. This is in line with Plenert and Best (2012), who found that having enough materials makes building projects a lot more efficient.

Results showed that the coefficient of time-sequencing processes was =.206 with a p-value of.039. This implied that a modification in unit time planning might improve the performance of the Dairy Cattle Project. This verifies Lloyd's (2013) finding that time management is a critical

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determinant of construction project performance. Finally, the data established a substantial correlation between stakeholder participation and RDDP performance (.218; p-value =.01). This revealed that changing the unit of measurement to stakeholder involvement will result in a change of.218 units for project performance. These results are in line with those of Kihuha (2018), who found that the amount of involvement in project planning affects how well a project does.

CONCLUSIONS AND RECOMMENDATIONS

Human resource planning is crucial for enhancing project performance since it is the human aspect that drives the whole project. Thus, having sufficient resources of qualified and trained individuals on a project and ongoing training to enhance their project management abilities is critical to the project's success. Therefore, human resource planning is critical and has a large impact on the performance of dairy projects. Moreover, the research indicated that financial resource planning techniques had a beneficial effect on project performance. Therefore, financial resource planning activities like budgeting, forecasting, and measuring the effectiveness of money allocated to each project function are very important for making sure resources are used efficiently, meeting project deadlines and budget constraints, and meeting the expectations of the beneficiaries of the project.

Project planning practices have a considerable and beneficial effect on the performance of the investigated project. Therefore, providing adequate and appropriate equipment, accurate material cost estimates and allocation, high-quality assets, and appropriate asset management processes significantly reduces resource losses and improves project performance relative to cost and time by minimizing project delays and costs. Furthermore, research indicates that time management and planning have a substantial impact on the performance of dairy initiatives. The project can meet its goals on time if it has a functional job description, a detailed work plan, a precise schedule, and a detailed plan for making the schedule.

Project managers were excluded from the planning phase of the RDDP. Because of this, the RDDP and other dairy projects should try to include managers early in the project's development and learn about the project's workers' needs so that they can meet them and improve project performance.

Financial services are a significant component of a project's budget and have a significant impact on both the planning and execution stages. To make successful use of this resource, project account books must be maintained accurately throughout the project's life cycle to enable accurate and secure reporting and recording of financial lessons learned.

Moreover, material planning must be prioritized for project performance. This is because correct planning increases performance by lowering lead times, resulting in high-quality service for project owners. Besides that, high-quality equipment must be bought on time and on budget, and a project's assets must be properly used and managed, which will improve the project's performance.

To construct accurate and accessible schedules, it is essential to include a series of acceptable activities into the scheduling process. Task sequencing should take into account the effective separation of dependencies and the logical link between project activities. Furthermore, managers should be engaged in developing project schedules and conducting frequent monitoring and assessment to ensure that project activities are completed at all phases of the project cycle. This would help avoid delays, cost discrepancies, and cost overruns while also improving project performance.

Suggestions for future studies

The purpose of this study was to determine the effect of project planning practices on the performance of dairy cattle projects in Rwanda, with a particular emphasis on the RDDP. Therefore, the researcher recommended that more studies be conducted on the techniques for designing a project

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and the performance of similar initiatives, and that a larger sample size be utilized to enable common results. Furthermore, research indicates that planning techniques contribute to a 62.7 percent difference in a project's performance. As a result, the researcher recommended that additional research be conducted to identify the variables influencing 37.3 percent of performance.

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