The major barriers to the implementation of project management in small and medium construction companies in Hargeisa[1]

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Abstract

This study investigates the significant challenges associated with the implementation of project management in small and medium construction companies in Hargeisa. Before the questionnaire design, a detailed literature review was carried out to identify 15 possible factors that upset the implementation of project management practices in small and medium construction companies. A questionnaire survey design was then used to obtain data from 30 small and medium construction stakeholders selected based on simple random sampling. Feedbacks from the respondent was then analyzed using SPSS Statistics Software and Microsoft Excel Packages. This was attained by calculating the Cronbach's Alpha, mean values and Relative Importance Index (RII), respectively, for reliability check and ranking purposes. The results from the study show that unrealistic timeline (RII = 0.813), inadequate understanding of project and product scope (RII = 0.807), poor communication/miscommunication (RII = 0.800), and misestimating expenses (RII = 0.773) are the four most significant challenges faced by small and medium construction companies when implementing project management, respectively. This study will be of high relevance to policy-makers in both the public and the private sector, since the implementation of project management practices is increasingly becoming a vital subject matter of discussion in developing economies like Somaliland. This study also proffers recommendations on the appropriate project management procedures that can help the partners of the Somaliland government manage the identified key challenges when developing programs for funding of activities that is targeted at advancing the performance of SMEs in Somaliland.

Keywords: Project Management, Barriers/Challenges, Small and Medium Construction Companies, Low- and Medium Income Countries, Organizational Performance, Hargeisa-Somaliland

[1] How to cite this paper: Fashina, A. A., Ahmed, M. H., Salah, J. A., Fakunle, F. F. (2020). The major barriers to the implementation of project management in small and medium construction companies in Hargeisa; *PM World Journal*, Vol. IX, Issue IX, September.

1. Introduction

Over the years, the global construction industry has continued to experience an increasing changes year after year as a result of novel technologies, new or heightened management system, and the need to expand construction activities to attain organizational objectives [1]–[3]. This has led to the use of project management practices and processes in the industry [4]–[7]. Although, there are numerous reasons while organizations embrace project management practices, project management principles and practices are seen as a vital part of any successful project in the industry [4], [5], [8] and its impact in the sustainable development of many businesses and countries, over the years cannot be overemphasized [9]–[12]. This can be linked to the fact that construction projects significantly contribute to the strategic direction of any establishment in the industry, be it large organizations or small and medium-enterprise (SMEs) [13]–[15]. Despite this, a large number of construction and building projects are still faced with delay in completion while some suffer unavoidable cost overrun and others experience poor efficient qualities [16].

Furthermore, SMEs have increasingly been seen as a major driver of socioeconomic growth and development for African countries [17]. Asides its commitment to the growth of the gross domestic product (GDP) of several African countries, SMEs represent approximately half of the jobs in these countries. For example, SMEs account for 33 % of the GDP of Tanzania, 33 % of the GDP of Ghana and 52-57 % of the GDP of South African. Besides this, SMEs sums up about 70 % of Nigeria's parts assembling sector and 91 % of formal business in South Africa [18]. One can therefore argue that an adequate support in the development of SMEs that are innovative- and creative-based can have a direct or indirect impact on domestic and global markets [19], [20]. This is why all sectors of most economies have an increasing interest in advancing SMEs [21]–[23].

Moreover, small and medium construction companies assume a distinct part in this progressive development, as they serve as a source of job creation [24], [25]. In fact, they contribute to the sustenance of the standard of life by increasing the average wages of the general public [25]. As such, small and medium construction companies have a significant obligation in the development and attractiveness of the economy low- and medium-income countries [26], [27]

In spite of this, small and medium construction companies are constantly faced with major concerns regarding the sustenance of an improved market share within a rigid competition among companies dealing with parallel services [28]. This is because customers/clients/owners are now seeking for high-quality products/services that can be achieved within a short duration at inexpensive prices. However, the constant growth and changes in the world of business in recent time require a strategic approach in organizing and managing small and medium construction companies for sustainability [15], [29].

Consequently, private and public SMEs (including construction companies) in many developing countries have invested profoundly in their businesses in an effort to attain this fundamental need. Yet, quite a number of these enterprises in the last decade are unable to yield the anticipated outcomes [30]–[32]. Nevertheless, on one hand, suggestions from practice and findings from prior research works show that successful feat attained by several organizations in recent years including SMEs can be traceable to their capability to manage several projects more strategically through project management processes which in turn upsurges the effectiveness of such SMEs or organizations [29], [33]. On the other hands, in most low- and medium-income countries, majority

of these SMEs particularly, those in the public sector are faced with challenges when implementing project management in their projects. Within this context, the small and medium construction companies in least developing countries need to pay additional attention to project management practices in order to sustain market share and safeguard return on investment, profitability and client demands. As such, it therefore clear that there is a need to explore the challenges encountered in the course of implementing project management in small and medium construction projects in low- and medium-income companies.

This study thus, attempts to fill the identified knowledge gap by investigating the major barriers to the implementation of project management in small and medium construction companies in Hargeisa. The findings from the present study will be of high significance to policy-maker, decision-maker and key SMEs stakeholders when formulating future strategies that are essential to developing economies, as regards to the impact of SMEs. Moreover, consultants, future academic and government researchers that might want to conduct studies in related field can benefit from the outcomes of this research work.

The first part of this paper presents the background introduction to the significance of small and medium construction companies and how the application of project management plays a crucial part in their success. The second part presents the theory on project management and the role of a project manager. Besides, the research methodology utilized in the current study is presented in the third part while the fourth part presents the results and data analysis. The findings and implications of the current study are comprehensively discussed in the fifth part. The last part of this paper presents the concluding remarks and practical recommendations that could guide the successful implementation of project management practices in future SME projects.

2. Theory

2.1 Project management and the role of a project manager

Most at times, when project management is to be discussed, words such as “planning”, “workflow”, “arrangement”, or “communication” might cross our minds. However, none of the aforementioned does actually express what project management really means, nor do they give a clear idea of what a project manager does daily. To make the meaning of project management to be as clear as possible, the definitions of project and management can be employed separately. On one hand, project can simply be expressed as a plan to achieve an objective while management on the other hand, can be seen as the act of creating and maintaining an environment in which objectives can be achieved [34], [35]. Consequently, project management can be express as the act of creating and maintaining an environment in which an objective can be achieved according to a plan [34], [35].

Basically, the responsibility of a project manager is to lead the project team towards the desired outcome [36], [37]. The project manager is the person assigned by the execution organization to attain the established project objectives and deliverables. Since planning is a major task of a project manager, it is important for the project manager to constantly provide a planned work schedule to avoid any problem during the course of the project [38]. As such, the project manager

can forecast any potential change in the budget if a finished project surpasses the anticipated time. Nevertheless, the general responsibilities or roles of the project manager are outlined and discussed as follows:

2.1.1 Communication

The project manager is responsible for ensuring that communications are sent, received and understood within the project [34], [39]. To achieve this however, it is important for the project manager to identify the preferred means of communicating to critical stakeholders, measure the best process to enable the identified means, and ensures the integrity of the process, as the project progresses [40], [41]. This allows the project manager who communicates well to explore ways to test the integrity of the project's communication system in terms of both message receipt and understanding [42].

2.1.2 Team building and collaborative work

The project managers are required to possess the skills to build teams [43], [44]. So, it is the duty of the project manager to encourage team building in order to reduce friction amongst team members. This is mostly achieved through the proper selection of individuals who are willing to work together for the success of the project [45]. This is because team building allows everyone in the team understand the reasons decisions are taken and helps communicate key expectations while encouraging learning and knowledge sharing [46], [47].

2.1.3 Planning and goal setting

Every project manager knows that whenever he/she fails to plan then he/she is set for a failed project [46]. This is the reason why planning and goal setting is one major leadership skills that every project manager seeks to develop and maintain at all time [48]. So, the prime goal of a project manager is to successfully manage and complete the assigned project through adequate planning [49].

2.1.4 Conflict resolution

A conflict is a result of the differences in ideas, beliefs, opinions or point of view. Conflict resolution is a vital leadership attribute a project manager must develop [50]. It is therefore, important that a project manager should see conflicts as mere opportunities to advance a project toward full delivery [47], [50]. This is because conflict mostly allows the project managers, project stakeholders or any team members to raise and address the identified problems and unexpected issues [45].

2.1.5 Time management

As a project manager, scheduling time is crucial for the prompt delivery of a project [45]. Managing time alongside balancing other tasks is the reason why a project manager position is seen as a multi-faceted position [51].

2.1.6 Monitoring

The delay in meeting up with project timeline is one of the major issued associated with projects [3], [16]. Thus, it is essential for a project manager to set up monitoring schedule that will progressively help evaluate the project execution and management [48], [49], [52]. This implies

that the project manager needs to ensure work progress, observe collection and evaluation of information and then use such information to take corrective actions wherever necessary, in order to increase project performance/outcome [45], [49], [50].

3. Research methodology

The research study adopts a questionnaire survey method to explore the significant challenges faced by SMEs when implementing project management in Hargeisa, Somaliland. A quantitative research was used to acquire data from the target population through field sources. A total of 15 possible challenges encountered when implementing project management in SMEs projects in Hargeisa were investigated in the current study. Besides, these challenges were rated in this study based on the Likert's scale of 5 ordinal measures from 1 to 5 according to the level of contribution [53].

The target population consist of construction practitioners from three small medium construction companies in Hargeisa that often participate in projects operations and management. From a population of 40, a sample size of 36 respondents was used in the study based on simple random sampling. This was achieved by adopting the Krejcie and Morgan's table as described in Ref. [54]. The population size was however limited to this figure in order to efficiently utilize the available time and resources assigned for the research work. In an effort to directly get factual information from the respondents, structured questionnaires were used to obtain primary data for the current research study through self-administration.

Furthermore, in order to check that a correct level of quality in the research instrument is reached in terms of its consistency and steadiness, a pilot survey was conducted. This was accomplished by the use of a convenience sample of experts in SMEs. Before the questionnaires were administered, two soft copies of the questionnaires were presented to two project management consultants to validate the contents therein, ensuring that the sentences are clear and precise. Thereafter the questionnaire distribution, the respondents were given 5 days to provide feedbacks. This was geared towards ensuring that the questionnaires are appropriately filled before collection.

Before the analysis of the collected data, the feedbacks from the respondents were filtered, and entered into spreadsheets (Microsoft Excel 2019 and SPSS work area). The reliability of the data obtained from the questionnaire survey was then tested via the Cronbach's Alpha method [55]. This was achieved by using SPSS Statistics Software (version 25) to compute the Cronbach's Alpha, while the reliability coefficient was determined to show the internal consistency of the data using Equation 1 [55]:

$$\textbf{Cronbach's alpha, } \alpha = \frac{K}{K-1}\left[1 - \frac{\sum V_i^2}{V_x^2}\right] \qquad (1)$$

where K, represents the number of items; V_i represents the variance of scores on each item; and V_x, represents the variance of the observed total test scores.

Relative Importance Index (RII) was chosen as a suitable analytical method [56] employed to establish a mean rating point and analyze the ratings received by means of the questionnaires. Each calculation was computed using RII formula in Equation 2 [56]:

$$\textbf{Relative importance index, RII} = \frac{\sum W}{A \times N} \qquad \textbf{(2)}$$

where W, represents the rating given to each factor by the respondents. For instance, 5 represents very high, 4 represents high, 3 represents average, 2 represents low and 1 represents very low. A is the highest weight (5 for this study) and N represents the total number of samples (30 for this study).

In addition, the study was conducted based on the standard ethical practices required of any reputable academic research. Respondents were informed both orally and in writing about the objective of the study and their consents was established before filling out the questionnaires. The confidentiality respondents were also assured before engaging them.

4. Results and data analysis

4.1 Survey results

Of the 36 questionnaires administered randomly among the target participants, 32 questionnaires were returned, 4 respondents were unable to return the questionnaires. Besides, 93.75 % of the feedbacks from the respondents were deemed valid while the remaining 6.25 % were recorded invalid (See Table 1).

Table 1: Summary of the total numbers of questionnaires distributed and returned, excluded, and valid questionnaires

S/N	Number of questionnaires distributed	Not returned	Number of returned	Valid	Invalid
1	36	4	32	30	2
2	100 %	11.1 %	88.9 %	93.75 %	6.25 %

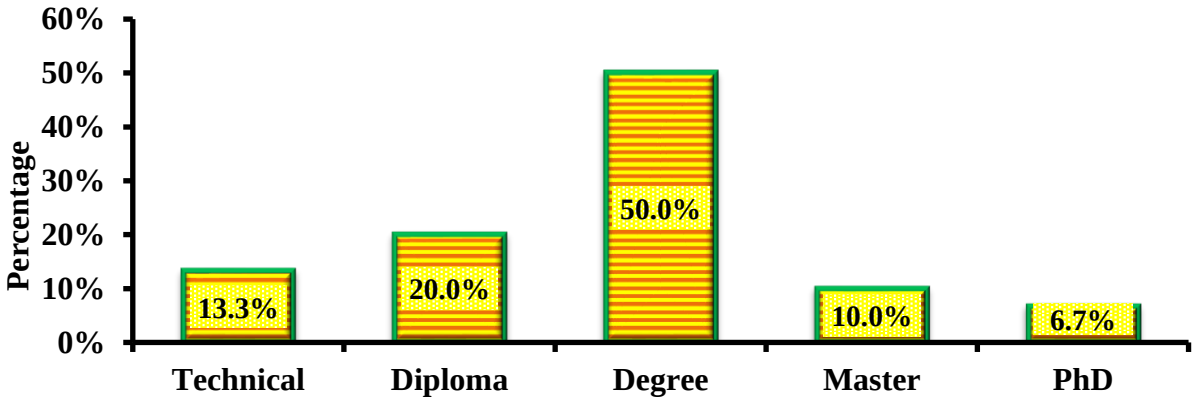

Figure 1: The percentage distribution of respondents' level of education

Regarding the respondents' education background, Figure 1 shows that respondents with bachelor degrees have the highest percentage (50 %). The respondents with diploma certificates are found to have the second highest percentage (20 %.) The respondents with technical school certificates are found to have third highest percentage (13.3 %). The respondents with master degrees are found to have the fourth highest percentage (10 %). Whereas, the respondents with PhD degrees are found to have the least percentage (6.7 %).

Table 2 presents the frequency and percentage distribution of the number of SME projects that the respondents have been involved in. It can be seen from Table 2 that the respondents' experience in SME projects are closely distributed. This is due to the fact that over 80% of the respondents have been involved in more than four SME projects i.e. 10 respondents have been involved in 4 to 6 projects, 9 of them have been involved in 7-10 projects while 7 of the respondents have participated in over 10 projects (23.4%). Besides, the remaining 4 (13.3 %) respondents have participated in 1-3 projects.

Table 2: Frequency and percentage distribution of the projects that respondents have participated in

S/N	Description	Frequency	Percentage
1	1-3 projects	4	13.3%
2	4-6 project	10	33.3%
3	7-10 project	9	30%
4	> 10 projects	7	23.4%
5	Total	30	100%

4.2 Cronbach's alpha data reliability test

With the use of Table 3, the internal consistency of feedbacks from the respondents was measured based on range of the Cronbach coefficient obtained [57]. Furthermore, the Cronbach's Alpha reliability test result obtained for feedbacks on the 15 challenges explored in this study shows that the Cronbach's Alpha values is 0.823. Meaning that the internal consistency of the feedbacks received in the current study has an excellent reliability of 82.3 %.

Table 3: Internal consistency of Cronbach's Alpha

S/N	Cronbach's alpha, α	Internal consistency
1	$\alpha \geq 0.8$	Excellent
2	$0.8 > \alpha \geq 0.7$	Good
3	$0.7 > \alpha \geq 0.5$	Satisfactory
4	$\alpha < 0.5$	Poor

4.3 Analysis of the challenges faced by SMEs when implementing project management

The 15 identified challenges have been ranked based on Relative Importance Index (RII) and Mean Value. To establish the level of significance of the different challenges faced by SMEs when implementing project management, the RII and Mean value rankings are classified based on the RII classification table presented in Table 4.

Table 4: Classification of RII

Scale	Level of Significance	RII
1	Very low	$0.0 \leq RII \leq 0.2$
2	Low	$0.2 < RII \leq 0.4$
3	Average	$0.4 < RII \leq 0.6$
4	High	$0.6 < RII \leq 0.8$
5	Very high	$0.8 < RII \leq 1.0$

Table 5: The mean score value and RII ranking challenges faced by SMEs when implementing project management

S/N	Barriers to the Implementing Project Management	RII	Mean Value	RII & Mean Ranking	Level of Significance
1	Failure of national governments to commit available resources to feasible projects due to insufficient capital planning and budgeting systems	0.700	3.500	6	High
2	Misestimating expenses	0.773	3.867	4	High
3	Inadequate understanding of project and product scope	0.807	4.033	2	Very High
4	Insufficient technical skills	0.747	3.733	5	High
5	Failure to appropriately link business value to technical functionality at the requirement gathering stage	0.627	3.133	10	High
6	Unsettled technical uncertainties	0.613	3.067	11	High
7	Insufficient customer needs assessment	0.640	3.200	9	High
8	Partners in many projects	0.613	3.067	11	High
9	Scope change	0.573	2.867	12	Average
10	Unrealistic timeline	0.813	4.067	1	Very High
11	Poor communication/Miscommunication	0.800	4.000	3	Very High
12	Delays in implementation	0.747	3.733	5	High

13	Delays in receiving disbursement from donor agencies/clients	0.693	3.467	7	High
14	Lack of contingency planning to meet emergencies or unanticipated delays	0.533	2.667	13	Average
15	Corruption	0.647	3.233	8	High

The results of the survey analysis of the challenges faced by SMEs when implementing project management is presented in Table 5. As perceived by the respondents, Table 5 revealed that unrealistic timeline (RII = 0.813) is the most ranked challenge faced by SMEs when implementing project management in terms of the level of significance. Furthermore, inadequate understanding of project and product scope (RII = 0.807), poor communication/miscommunication (RII = 0.800), misestimating expenses (RII = 0.773), and insufficient technical skills (RII = 0.747) and delays in implementation (RII = 0.747) combined are ranked second, third, fourth and fifth positions, respectively.

Besides, failure of national governments to commit available resources to feasible projects due to insufficient capital planning and budgeting systems (RII = 0.700), delays in receiving disbursement from donor agencies/clients (RII = 0.693), corruption (RII = 0.647), Insufficient customer needs assessment (RII = 0.640), and failure to appropriately link business value to technical functionality at the requirement gathering stage (RII = 0.627) are ranked sixth, seventh, eighth, nineth and tenth positions, respectively.

Although three of the remaining four challenges have a high level of significance, the respondents believe they are the least significant challenges faced by SMEs when implementing project management. They include: the lack of contingency planning to meet emergencies or unanticipated delays (RII = 0.533), scope change (RII = 0.573), unsettled technical uncertainties (RII = 0.613) and partners in many projects (RII = 0.613).

5. Discussion

Concerning the most significant barrier to the implementation of project management in small and medium construction companies in Hargeisa, the respondents selected unrealistic timeline as the first among a list of 16 potential barriers. This is however, not too surprising because it is a known fact that most project managers impose deadlines that their project teams would possibly not be able to meet up with [58]. This makes most of the project managers constantly struggle with unrealistic project timelines and most importantly, the expectations of key stakeholders and clients [3]. They possibly would have avoided this barrier if the initial deadline was realistic enough or achievable from onset. This can however, be traceable to fact that companies are trying to gain competitive advantage over one another by becoming more aggressive when setting the projects goals leaving out the most needed efforts that is motivated by a well-calculated business condition [59], [60]. The choice of the respondents is thus justifiable. However, it is vital for project managers to make efforts to understand the competence of their project teams and leverage this on the project timeline by setting priority for the project tasks, activities and deadlines,

accordingly. This can be achieved by using project scheduling tool like agile project management which has the ability to measure the work in progress or completed activities in a single run by collectively receiving input from all key stakeholders [61].

As perceived by the respondents, inadequate understanding of project and product scope, and poor communication/miscommunication as the second and third most significant barriers to the implementation of project management in small and medium construction companies in Hargeisa, respectively. The choice of the respondents here is vital, since it is an established fact that the lack of understanding of the product or project scope is mainly initiated by internal miscommunication alongside disagreements among the major project stakeholders concerning changing requirements [62]. This can directly affect the project teamwork and most times leads to conflicts among team members, which can possibly delay the entire project if not properly managed. In order for project managers to ensure better transparency and accountability in projects and within the project team members they need to rely on the proper project management tool that can create room for every team member to stay updated [63].

Respondents ranked misestimating expenses as the fourth most significant barrier to the implementation of project management in small and medium construction companies in Hargeisa. To a large extent, this is agreeable because the failure to properly estimate project cost/expenses as long been considers as the most common barrier to the implementation of project management [64]–[66]. This can be traceable to the fact that misestimating expenses can result to overwhelming difficulties in a project's lifecycle, since a project involves quite a number of entities that incur a vital cost, individually. This result validates the findings from the studies carried out by Deloitte in 2014 [67] and Liquid Planner in 2017 [68]. On one hand, the finding from the former indicated that 22% of project professionals perceives budgeting related issues as a principal barrier to the implementation of project [67]. On the other hand, the later study indicates that 49.5% of project managers in the manufacturing industry are faced with the management of project cost [68]. It is vital for project manager in small and medium construction to adopt project management tool that can assist them to effectively calculate and monitor project costs during the implementation stage.

Furthermore, insufficient technical skills and delays in implementation were both ranked by the respondents as the fifth most significant barrier to the implementation of project management in small and medium construction companies in Hargeisa. The choice of the respondents here is quite significant, because insufficient technical skills on one side is a major project management barrier in the Somaliland construction industry that demand a certain level of knowledge and expertise to be resolved [69]. This implies that the success of a project team cannot surpass the individual technical skills of its members. Besides, insufficient technical skills among the project team members can delay the implementation of PM in construction projects and the lack of accountability can lead to rework, members blaming each other, or conflicts [70], [71].

Regarding the sixth, seventh and eighth most significant barriers to the implementation of project management in small and medium construction companies in Hargeisa, the respondents ranked failure of national governments to commit available resources to feasible projects due to insufficient capital planning and budgeting systems, delays in receiving disbursement from donor agencies/clients, corruption in these rank positions, respectively. First, bearing in mind that Somaliland, is an unrecognized self-declared state, failure of national governments to commit

available resources to feasible projects due to insufficient capital planning and budgeting systems is a vital barrier to the implementation of PM in the small and medium construction companies as they are faced with financial deficits. This is due to the fact that lateness in honoring payments by donor (majorly the Somaliland Government) impede their service delivery and leads to use of cheap labor. Besides, the effect of delayed payment is delay in project progress which ultimately affects completion date of the project. Moreover, this is can also be traceable to corruption practices within the government agencies.

In addition, the results of the current study revealed that the respondents ranked insufficient customer needs assessment, and failure to appropriately link business value to technical functionality at the requirement gathering stage as the nineth and tenth most significant barriers to the implementation of project management in small and medium construction companies in Hargeisa. One would have expected the respondents to rank insufficient customer needs assessment as one of the top five significant barriers that impedes the implementation of PM. This is because customer/client needs assessment normally supports the early stage of any project development and this has proven to be very challenging even to the most experienced project managers and professionals [72]. Also, since most of the workforce in the small and medium construction companies lacks the required technical skills that lead to development projects, it is expected that they fail in their approaches to gathering information, making it difficult to make early decisions that are justifiable. Moreover, these early decisions are most crucial when seeking a long-term project success.

Finally, the respondents ranked the lack of contingency planning to meet emergencies or unanticipated delays, scope change, unsettled technical uncertainties and partners in many projects as the least significant barriers to the implementation of project management in small and medium construction companies in Hargeisa. Since, scope creep/change is a natural and expected phenomenon for any project and most building clients in Hargeisa precisely do not know what they want, the respondents selected this as the least barrier. However, it is important for project managers to be proactive with client engagement during the planning phase to help determine the necessary requirements. This is reason why the respondents see no reason why the lack of contingency planning to meet emergencies or unanticipated delays should be listed among the most significant barriers, as the project managers here are proactive in this regard. Likewise, most small and medium companies in Hargeisa depends on subcontracts from big construction companies and other smaller projects from clients [73]. As such, the needed requirements, procedures and standards are communicated to them, allowing the application of PM to become easier. This thus validates the reason why the respondents ranked partners in many projects as one of the least barriers to the implementation of project management in this context.

6. Conclusions

The significant challenges associated with the implementation of project management in small and medium construction companies in Hargeisa has been successfully investigated in this study. A total of 15 major barriers faced when implementation of project management has been identified and analyzed in this research work. Using Cronbach's alpha reliability test, the internal consistency of the feedback from the questionnaire survey was tested and validated. Table 5

indicates that of the 15 challenges investigated in this study, the following are the top five most significant challenges faced when implementing project management practices in SMEs in Hargeisa: unrealistic timeline (1st); inadequate understanding of project and product scope (2nd); poor communication/miscommunication (3rd); misestimating expenses (4th); insufficient technical skills (5th) and; delays in implementation (5th). As perceived by the respondents, the least significant challenges include: the lack of contingency planning to meet emergencies or unanticipated delays, scope change, unsettled technical uncertainties and partners in many projects.

In addition, the major contribution of this research work is providing a better understanding on the major barriers to the implementation of project management in small and medium construction companies. The results from the current study are therefore vital to decision-makers, policy-makers, and major SME stakeholders as the findings are expected to provide novel insights on how project management practices are critical to the success of small and medium construction companies in Hargeisa and elsewhere. Moreover, future academicians, graduate students and government researchers in related field can use the vital information or data in the current study to support their arguments. Although this study examined the major influence of six project management practices on the performance of SMEs in Somaliland, it is strongly recommended future researchers should investigate the major influence of the other four project management knowledge areas on the performance of SMEs in Somaliland.

Since the findings from this study has shown that there exist some significant challenges that hinders the implementation of project management practices in small and medium construction companies which in turn affects the organizational performance of such SMEs, it is strongly recommended that SMEs should enforce project management practices in the implementation of all their projects. On the other hand, in order to mitigate the major identified barriers impeding the implementation of project management practices in small and medium construction companies and realize a better return on investment and profitability, SMEs should support their staffs with the much-needed knowledge by continuously organizing project management training activities with essential project management skills.

7. Acknowledgments: The authors are grateful to thank the small and medium construction companies that participated in this study. Their efforts and contributions to this research work are well appreciated.

8. Declaration of Conflicting Interest: The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

9. Funding: The author(s) received no financial support for the research, authorship, and/or publication of this article.

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