



Quality Management of Transportation Construction Works at Construction Investment Project Management Board of Muong Khuong District, Lao Cai Province, Vietnam

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ABSTRACT

This article analyzes and evaluates the current status of construction quality management at the Construction Investment Project Management Board of Muong Khuong district, Lao Cai province, Vietnam to find successes, limitations and causes. cause of limitation. On that basis, the authors propose a number of solutions to improve the quality management of traffic construction at the project management board of Muong Khuong district.

Keywords: Construction quality management, SmartOSC Joint Stock Company, recruitment brand

1. INTRODUCTION

Construction investment project management is the activity of managing all tasks to ensure completion of a construction project. Specifically, tasks range from construction technical expertise to planning supervision, every step of the project process. The results of the work and the success of the project depend greatly on how to manage, plan, and manage the process. Construction project management is one of the most important jobs of a construction project, directly affecting the quality and progress of the project. The specific tasks of construction investment project management are to plan project implementation, wait for approval, apply for licenses from relevant parties and make implementation plans. After that, the manager will prepare investment and then carry out construction.

“Quality management is the application of methods, procedures and scientific and technical knowledge to ensure that products will be or are being produced in accordance with the design and contract requirements in the most effective way.”, A. Robertson

Quality management, “it is an effective unified system of activities of different departments within an organization, responsible for implementing quality parameters, maintaining and enhancing it to ensure product quality. produced and consumed in the most economical way, satisfying consumer needs” A. Feigenbaum

Thus, “Quality management is the activities of the general management function to determine quality policy and implement it through measures such as quality planning, quality control, quality assurance and quality improvement in the quality system”

From the perspective of public administration management, this is the first scientific work to comprehensively and specifically research traffic construction quality management at the Construction Investment Project Management Board of Muong Khuong district, Lao Cai, Vietnam. Within the limits of this article, based on the standards, processes, norms and regulations of the state in the field of quality management of construction works in general and traffic works in particular. The authors research and evaluate the current status of traffic construction quality management to propose solutions to achieve the goal of effective operation and compliance with state regulations. ensure the quality of traffic works in the area to achieve the highest efficiency.

2. Research overview

Quality does not arise naturally; it is the result of the impact of a series of closely related factors. To achieve the desired quality, it is necessary to properly manage these factors.

Quality management is an aspect of the management function to determine and implement quality policy. Management activities in the field of quality are called quality management. Currently, there exist different views on management. quality management.

According to GOST 15467 – 70: Quality management is to build, ensure and maintain the inevitable quality level of products when designing, manufacturing and circulating for consumption. This is done by checking the quality of the system, as well as targeting the factors and conditions that affect cost quality.

According to A.G. Robertson: a British expert on quality believes that quality management is identified with a management system that builds programs and coordinates the efforts of different units to maintain and enhance quality. Quality in production design organizations to ensure the most efficient production of objects that fully satisfy consumer requirements

According to Japanese industrial standards, quality management is defined as a system of production methods that facilitate the economical production of high-quality goods or the provision of quality services that satisfy customer requirements. consumption.

According to Professor, Dr. Kaoru Ishikawa: through a famous expert in the field of Japanese quality management, the definition of Quality Management is the research, implementation, design, construction and maintenance of a number of quality products. The most economical quantity has the most benefits for consumers and always satisfies consumer needs.

According to Philip Crosby, an American expert on quality, the definition of quality management is understood as a systematic means of ensuring overall respect for the components of an action plan according to an international standards organization. Idoll 9000 believes that quality management is an activity with a general management function aimed at setting policies, objectives, responsibilities and implementing them by quality planning, quality control, quality assurance and improvement. quality within the framework of a quality system.

Referring to the successful management models of previous research review authors (Gary R Herrkens; MBA Nguyen Van Dung; E. Westerveld), the author identifies an effective project management model for the Management Board. construction. Thereby, project management effectiveness according to the author includes (1) ensuring profits of the project management consulting contract, (2) ensuring the project is completed on time within the set budget. approved, (3) ensure quality and progress, and (4) actively improve project management activities after consulting. Only when these requirements are met can project management activities be considered effective.

In the country, there have also been many research topics related to the field of management and use of capital for capital construction investment, and on the management of capital construction investment projects in general. However, the scope of research on these topics is quite wide and general in nature. There are very few research topics on specialized investment project management such as irrigation, agriculture, electricity, especially management. traffic construction projects; Specifically, transportation project management. The Provincial Transportation Project Management Board is where most of the province's key transportation projects are concentrated.

Nguyen Viet Dung (2006), "Managing investment projects to build transportation infrastructure in Vietnam". The topic has a wide research scope (In Vietnam), so the concepts and data are still general, the content of the topic is heavy on theory, lacking investigative and practical data; Specifically, illustrative diagrams and tables

-Pham Huu Vinh (2011), "Improving the management of investment projects at Transport Construction Corporation 5". The topic refers to the improvement of investment project management at the Corporation. Transportation Construction Company 5, providing basic theories on project management, analyzing the current situation and offering solutions to improve project management at the Construction Construction Corporation traffic 5. The topic focuses mainly on project management during the project implementation phase at projects under the management of Transport Construction Corporation 5.

- Cao Ngoc Loi (2012, "Improving the efficiency of self-construction project management of the General Construction Consulting Joint Stock Company (NAGECCO)". The topic refers to the improvement of consulting work investment project management at NAGECCO, the study points out the basic theories of project management consulting, analyzes the current situation and offers solutions to improve project management consulting at NAGECCO.

Based on the research overview, the authors analyzed the current situation at the construction investment project management board of Muong Khuong district, Lao Cai province, Vietnam.

3. RESEACH METHODOLOGY

Information collection method: With limited time and resources, the author only focuses on collecting and exploiting data from secondary information sources at the Construction Investment Project Management Board of Muong Khuong district.

Secondary data analysis method: Based on the data collected above, to carry out the thesis, the author used statistical methods to describe through calculating absolute numbers and relative numbers to reflect the results. reflects the fluctuations as well as the development trend of the quality of traffic construction project management of the Construction Investment Project Management Board of Muong Khuong district, Lao Cai province, Vietnam.

4. Content

4.1. Theory of quality management

Construction quality management: Is the impact to ensure that the constructed project meets predetermined quality characteristics. It is the organized and adjusted impact of relevant parties on the entire construction activity through measures such as construction quality planning, construction quality inspection and supervision, and ensuring construction quality. construction quality and other measures to create construction products in accordance with established economic and technical standards, satisfying the needs of investors and society.

Thus, construction quality management is the most important activity, determining the entire quality and safety of construction projects.

Construction quality management is an indispensable part of construction project management. It is formed and implemented right from the project planning, project implementation and construction project completion stages by all entities participating in construction activities.

For investors, doing a good job of managing construction quality will help the investor have quality projects that meet the investor's requirements, making the investment effective.

Traffic works are quality controlled from preparation and implementation of construction projects, to management and use of the works to ensure safety for people, property, equipment, works and structures. neighboring program.

Completed construction items and works are only allowed to be put into operation and use after being accepted to ensure the requirements of the construction design, applicable standards, technical regulations for the project, and other requirements. requirements of construction contracts and relevant legal provisions.

The specialized construction agency guides and inspects the quality management of organizations and individuals participating in construction, and organizes the quality assessment of construction works; Recommend and handle violations of construction quality according to the provisions of law. Contractors participating in construction activities must have sufficient qualifications according to regulations and must have measures to self-manage the quality of construction work they perform, in which the main contractor or general contractor is responsible. Manage the quality of work performed by contractors.

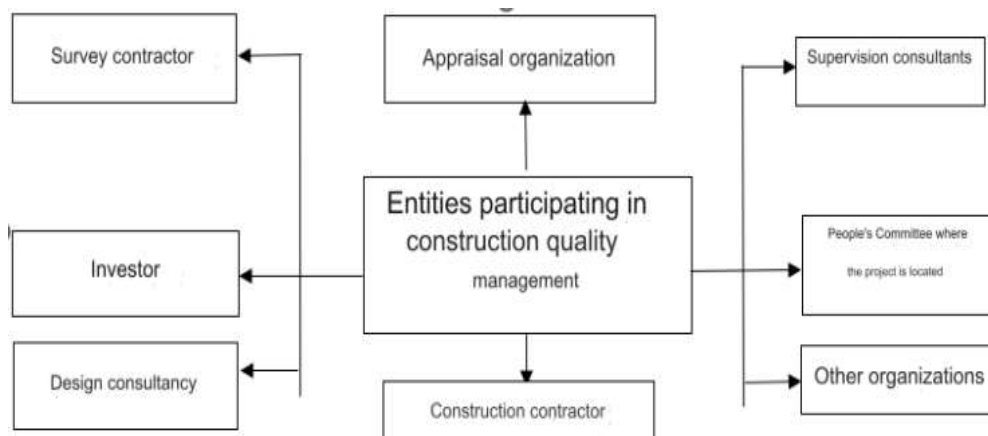


Figure 1: Entities participating in construction quality management

The Project Management Board's construction quality management process is also carried out from the preparation stage to the end of the project, putting the project's works into operation (Quality Management Diagram). during the construction investment process).

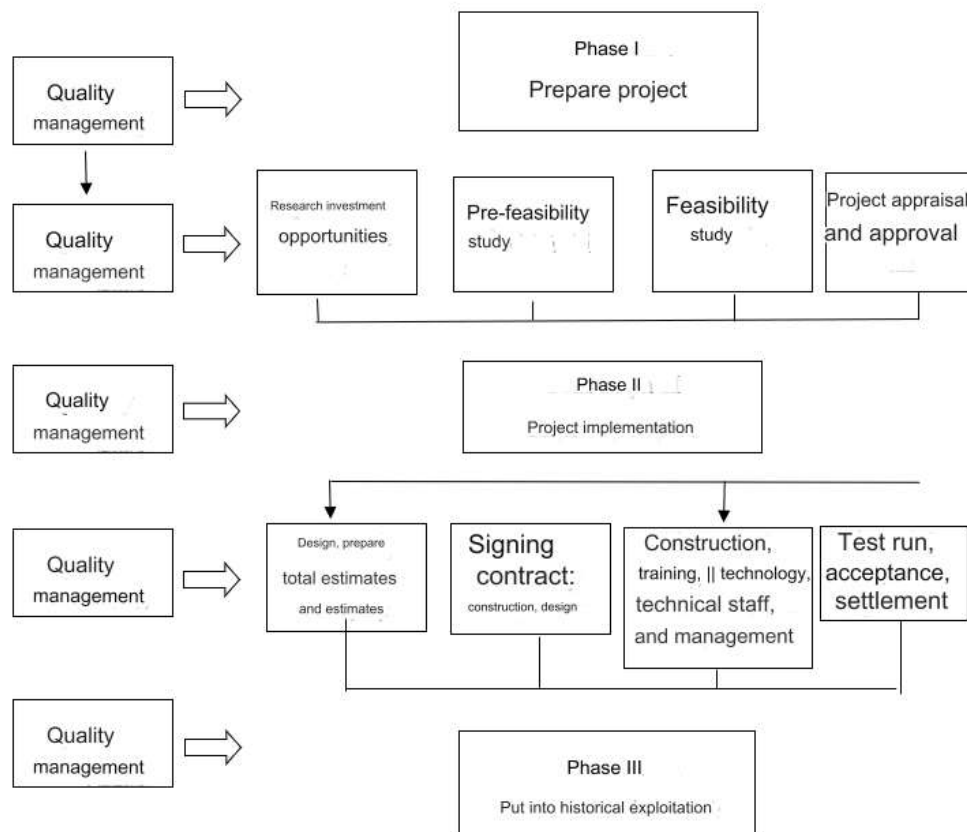


Figure 2. Quality management in the construction investment process

Legal basis and technical standards in construction management in Vietnam

- Construction law; Decree 46/2015/ND-CP of the Government on quality management and maintenance of construction works; Circular No. 04/2019/TT-BXD dated August 16, 2019 affirmed the position and role of state management on construction quality as follows:
- The Ministry of Construction unifies state management of the quality of construction works nationally and manages the quality of specialized construction works, including: Civil works; industrial works and construction materials; light industrial works; technical infrastructure projects; Urban traffic works except railway works, river crossings and national highways.
- Ministries managing specialized construction projects coordinate with the Ministry of Construction in managing the quality of specialized construction projects.
- Provincial People's Committees, according to decentralization, will state manage the quality of construction works in the area. The Department of Construction and specialized construction management departments assist the Provincial People's Committee in managing the quality of specialized construction projects in the area..

4.2. Current status of traffic construction quality management at the Construction Investment Project Management Board of Muong Khuong district, Lao Cai province, Vietnam.

To effectively manage the quality of traffic construction, the Construction Investment Project Management Board of Muong Khuong district carries out management in each stage of investment project implementation.

The project preparation phase includes the following tasks: Organizing the preparation, appraisal and approval of: Pre-feasibility study report; Feasibility research report; Technology economic Report; Prepare the ground and clear bombs and mines.

The project implementation phase includes the following tasks: Construction survey; Prepare, appraise and approve designs and construction estimates; Issuance of construction permit (for projects that according to regulations must have a construction permit); Organizing contractor selection and signing construction contracts; Construction works; construction supervision; acceptance of completed construction works; hand over the completed project and put it into use; Operate, test run and perform other necessary work.

The final phase of construction to put the project's works into operation includes the following tasks: Finalization of construction contracts, warranty of construction works.

The investment project management process at the Project Management Board complies with legal documents and implementation regulations issued by competent authorities. In addition, during the implementation process, we also comply with separate regulatory documents depending on the nature and scale of the project.

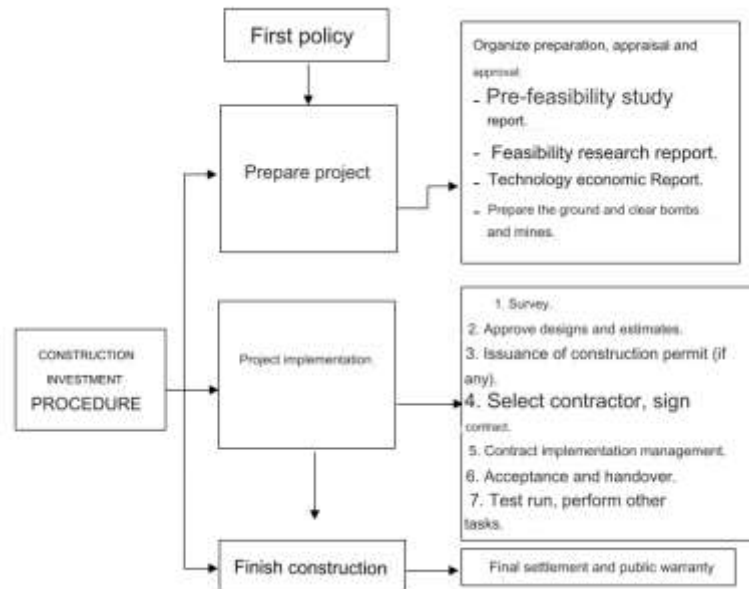


Figure 3: Sequence of construction investment implementation at the Construction Investment Project Management Board of Muong Khuong district, Lao Cai province, Vietnam

Within the scope of the article, the author evaluates the detailed current situation of construction quality management from the design survey step, to construction and installation in the area for projects of the Project Management Board. Muong Khuong district construction investment project (investor). At the same time, propose solutions to improve the quality of traffic construction in Muong Khuong district in the coming time.

4.2.1. Managing the quality of traffic construction during the construction survey phase

a. Construction survey quality management process

Regarding the management process, the District Construction Investment Project Management Board has applied Decree No. 46/2015/ND-CP dated May 12, 2015 of the Government [8] to implement public quality management. The basic construction survey ensures the sequence of implementation steps, as well as follows the spirit of Decision No. 39/2021/QD-UBND dated July 20, 2021 of the People's Committee of Lao Cai province on promulgation, regulates a number of contents on construction investment project management and construction quality management in Lao Cai province [14]. However, due to the limited professional capacity of a part of the staff and staff in the unit, the phenomenon of survey tasks being set up for some construction projects is sketchy, and tasks are set up for the sake of it. does not ensure the quality of construction survey work.

b. Content of quality management in construction surveys of subjects

- For investors: Approval of survey tasks and plans is still procedural in nature, not closely following the design requirements as well as the requirements that need to be implemented during the survey process. A part of the Project Management Board's staff did not carry out survey supervision as well as accept the survey process and survey results at the site, but only accepted the documents, leading to the phenomenon of the amount of work performed not being paid. Exactly; The selection of a competent survey contractor has not really received due attention.

- For contractors performing survey work: Most of the province does not have independent survey contractors. Most design consulting companies also carry out survey work. Considering the capacity profile of these units, all conditions are met for implementation, however in reality the staff participating in the survey and preparing the profile are hired on a seasonal basis for each project, not the main human resources of the project. Units as well as human resources are proposed in the capacity profile. Therefore, quality and progress cannot be guaranteed to meet demand. This leads to a situation where many projects do not prepare survey logs, and survey tasks and plans are poorly prepared for approval. Many projects do not have or have geological survey plans but are not suitable in terms of drill hole location, number of drill holes and drilling depth compared to the scale and importance of the project. Experimental data and analysis of physical and mechanical criteria were not performed by standard laboratories, survey data were not consistent with reality, and the process of storing survey results was not carried out in accordance with regulations. , the survey leader did not meet the required capacity conditions as prescribed.

4.2.2. Quality management of construction design

a. Construction design quality management process

Basic construction design quality management ensures management sequence requirements from task setting to verification, appraisal, approval and acceptance of construction designs.

Basic works ensure compliance with investment policies, load-bearing capacity as well as load-bearing safety capacity of the entire project. However, due to the limited understanding of the nature of landscape planning, general planning of the area and architectural regulations of a part of the investor's staff. Therefore, many projects in the approval process still violate planning criteria, are not really suitable for the general landscape as well as the ability to synchronously connect infrastructure and techniques with neighboring projects.

b. Quality management content during the design phase

- For investors: Hiring qualified organizations and individuals to do design tasks is essential. However, the design contractor selection process still focuses heavily on formality, considering the contractor's capacity based on the capacity profile of the contractor provided, so many selected design units do not fulfill all the responsibilities and tasks assigned to them. Most of the projects in the district are small and medium-sized projects, so units with real capacity and large-scale operations often do not need to participate. Regarding the investor's staff participating in project management, there are still situations where projects do not have their design tasks approved or have sketchy approvals of a reactive nature.

- For design consulting contractors: In addition to the qualified contractors, there is still a group of contractors who hire and borrow their capabilities to prepare the company's capacity profile, leading to project documents that do not ensure quality. Specifically as follows: Many projects do not have an explanation of structural calculations or they do have a formality (no calculation of internal forces, no survey and assessment of vehicle flow and vehicle load when designing roads and bridges; Improper or insufficient implementation of hydrogeological conditions when designing bridges, spillways, dikes, and dams). Most design documents have not established maintenance procedures for the project, and the design unit does not supervise the author according to regulations. Most consulting units lack individuals in charge of designing according to appropriate specialties, and the capacity to practice construction activities is limited (there is still a situation of borrowing certificates: 01 architect). have a design certificate included in the competency profile of many consulting companies); Due to lack of professional practice capacity, the design does not meet technical requirements, leading to very poor product quality (because there is no investment in research, mainly copies from previous projects). similar, typical; the authors are mainly newly graduated engineers with no experience...); Most design consulting units do not have a KCS inspection department; Design consulting units often do not have author supervision and up to now no project has been designed with maintenance procedures or directed construction measures.

- For design and estimate verification work: Previously, the estimate design verification work was performed by consulting businesses, but the verification consultants' responsibility for implementation has not been strictly implemented according to regulations. regulations of Construction Law. Many errors in the design of consulting and verification do not give exams.

4.2.3. Quality management during the construction phase

a. Construction quality management process

Construction quality management is controlled from the stage of procurement, production and manufacturing of construction products... to the process of implementation, testing and acceptance of completed works and putting them into use. use. The process of this management work is closely coordinated between the investor, construction contractor and consulting contractors from the implementation sequence to the implementation process to ensure project quality.

- For construction and installation work: Construction and installation businesses in the district are mainly small and medium enterprises. Besides a number of large enterprises that have made great efforts in organizing their staff and investing in equipment for production, the majority of small and medium-sized enterprises still lack the operational capacity of their construction staff. Limited, technical workers are mostly seasonal contracts, have not been properly trained, construction machinery and equipment are not guaranteed compared to the Bid Documents. The quality management system in large-scale enterprises is basically well implemented, however, for small enterprises that have not established a quality management system or have established it, it is only a formality and the quality is not high. Most businesses arrange project commanders and technical staff, construction equipment is not in accordance with the bidding documents, and have not seriously implemented the commitments in the construction contract. The preparation of quality management records is also reactive, such as: Recording construction diaries that do not meet regulations is mainly in the form of memoirs. Internal acceptance work is still formal. Testing of supplies, materials, and semi-finished components to determine quality is still confrontational. Not making as-built drawings or making as-built drawings incorrectly according to regulations. This leads to the construction quality of some jobs not ensuring the approved design documents, such as: Many construction projects include the horizontal slope of the road surface, the vertical slope, the slope of the slope, and the particle composition of various types of stone aggregates. Standard chips and crushed stone do not meet design requirements; The arrangement of expansion joints of concrete roads does not meet technical requirements; The road surface in some locations still has subsidence, local cracks, and slope erosion; Many projects do not have all landmarks and elevations recorded, causing difficulties in inspection and acceptance of the projects.

- For supervision consulting work: The current situation of supervision consulting in the district is still weak in terms of capacity and limited understanding of construction law, especially awareness of the importance of construction law. Quality management of construction works; Supervision consultants have not yet adhered to supervision tasks and supervision contracts to perform construction supervision work. Not helping the Investor check the capacity conditions of contractors compared to the winning bid documents; Quality management records have not been checked and controlled; Recording the supervision diary does not fully demonstrate the quality management work of the investor; Not commenting or not regularly evaluating quality after each day or each shift in the construction diary; Failure to check and control the documents used as a basis for acceptance leads to Acceptance Minutes that do not meet current regulations.

- Regarding the field of testing: Most of the inspected laboratories have not seriously implemented management work according to regulations such as: Not promptly applying Technical Standards on testing of construction materials. Some laboratories do not organize field sampling and do not have samples stored at the laboratory. Arranging laboratory staff who have not gone through laboratory training classes, in particular, there is also a laboratory head unit who has not been trained through laboratory management classes.

b. Content of quality management during the construction phase of traffic works of the Project Management Board

- Most of the traffic works in the district are small and medium-sized works, the nature of the work is not complicated, so the project management of the above works is carried out by the Project Management Board. The project is self-organized and implemented, without hiring project management consultants.

- Organizations and individuals implementing the project are selected based on eligibility criteria, capacity and experience in implementation including construction, supervision, testing, quality control and other tasks. Other relevant consultants.

- When projects are assigned the investment preparation list, the Board of Directors conducts meetings and assigns tasks to individuals participating in project management. The duties and powers of each individual are expressed by the Decision to assign tasks of the Director of the Board. Individuals assigned the task will carry out investment preparation work. Check capacity compatibility and supervise the work performed by consulting contractors in survey, design, verification, construction, supervision... Participate in monitoring and controlling the quality of supplies and materials and equipment installed in the project as well as phase acceptance, acceptance of construction items and handover of the project into use. When the project is completed, make a report to the state management agency on the quality situation and construction quality management work.

4.2.4. Quality management during the project warranty period

- Regarding the project warranty process: Construction contractors are responsible for project warranty according to the provisions of Decree 46/2015/ND-CP. In Muong Khuong district, contractors and entities participating in the construction of basic projects perform well the work of project warranty after handover and put into use. For items that are damaged during the warranty period, they will be thoroughly repaired as soon as they are discovered. For the Construction Investment Project Management Board of Muong Khuong district, it has properly performed its functions and tasks, and agreed in detail in the contract with the contractor participating in the construction on the term, form of construction warranty, and design. equipment after handover and put into use as well as the warranty amount for each project; Regularly inspect, monitor and promptly detect damage during use to request construction contractors to repair or replace works to ensure project quality; At the same time, we have seriously implemented the supervision and acceptance of the remedial and repair work of the construction contractor during the repair and remediation process. There is no situation where the contractor fails to fix or fails to fix the project warranty within the warranty period.

4.2.5. Quality management during construction maintenance phase

a. Construction maintenance process

Construction maintenance work at the Construction Investment Project Management Board of Muong Khuong district is not given due importance. Most projects do not have maintenance procedures established nor approval of cost estimates for maintenance and implementation of the maintenance process according to regulations. Therefore, many construction projects are not maintained and repaired on time, causing the construction to deteriorate quickly (bridge steel rusts, concrete beams crack, protective layer is damaged, leading to corrosion of steel reinforcement). ...), even many projects do not have plans or capital to carry out maintenance, leading to degraded projects, very short lifespans, and premature failure, causing a huge waste of money that no one can afford. responsibility.

b. Quality management content during the maintenance phase

Most maintenance work for traffic works in the district is not done or is done poorly and out of order.

Testing, testing, and appraisal of project quality are only carried out during the construction phase, so it is not possible to control and absolutely ensure the quality of the project according to standards and regulations according to the documents. design sketch.

Regarding the responsibility of the investor: The Construction Investment Project Management Board of Muong Khuong district is the investor or representative of the investor responsible for the entire quality of construction works in the assigned district. management. Responsible for selecting contractors, signing economic contracts, supervising and accepting project quality from project planning, surveying, design, construction to acceptance and handover to put the project into operation. use and settlement of the project. However, the number of staff of Project Management Boards who

understand construction quality management is still limited. On the other hand, when selecting contractors, investors have not fully checked and controlled information about the capacity and experience of truly qualified and experienced contractors participating in project implementation. The contractor selection method is not appropriate, the selection of the winning bidder is mainly based on the lowest bid price without fully taking into account quality assurance factors and investment efficiency of the project. For some projects, organizing bidding is only a formality and procedure.

5. CONCLUDE

The research article has mentioned the theory of employer branding and concepts related to e-commerce. From there, it clearly shows the importance of human resources in the overall development of the enterprise. The author has provided a clearer analysis of Berthon's first employer brand strength scale. In particular, the research is set in a real-life context at SmartOSC Joint Stock Company - a company specializing in providing e-commerce service consulting solutions. The author has added the factors of Corporate Culture and Globalization to the research model. The results showed that this factor has a significant influence on the employer brand strength of SmartOSC Joint Stock Company. Through research results, solutions based on the actual situation are proposed to help companies improve the strength of their employer brand. In addition, the author also adds recommendations for the government and relevant departments in technology development in Vietnam. Help Vietnam adapt to the technological revolution that is taking place at a rapid pace today.

However, the research still has gaps because the author's research experience is not yet extensive, so it is not possible to make truly objective judgments. The newly built model only explains 47.6% of the employer brand strength of SmartOSC Joint Stock Company. There are still other factors that need to be clarified by later researchers. The resulting research sample was 203, which is considered quite good but still not representative of the whole when the author's research scope is nationwide. The time to collect primary data is quite short. It is not possible to consider unusual factors that affect the strength of the employer brand. This study is the reference framework for future studies to consider and improve the gaps that have been raised. From there, it helps enhance the strength of the employer brand in Vietnam.

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