Measures of Sustainable Construction Projects Performance

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BY

AYODEJI E. OKE

Federal University of Technology Akure, Nigeria

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INVESTOR IN PEOPLE

To God
Who Made All Things Beautiful

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About the Author

Ayodeji E. Oke is a Senior Lecturer in the Department of Quantity Surveying, and Team Leader of Research Group on Sustainable Infrastructure Management plus (RG-SIM+), Federal University of Technology Akure, Nigeria. With more than 300 publications, his research interest is in Sustainable Infrastructure Management (SIM), emphasising sustainable construction, value management, quantity surveying and construction in the digital era. He has collaborated with other authors to publish the following research books: *Sustainable Value Management for Construction Projects*; *Construction Digitalisation: A Capability Maturity Model for Construction Organisations*; *Sustainable Construction in the Era of the Fourth Industrial Revolution*; *Value Management Implementation in Construction – A Global View*; *and Smart Cities: A Panacea for Sustainable Development*.

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Preface

The construction industry has been found to be fundamental to the development and growth of any economy, both developing and developed. However, the industry has faced some challenges that have affected the delivery of projects for clients. A major issue in this industry is the proper understanding of project requirements by concerned stakeholders such as clients, financiers, sponsors, professionals, contractors, subcontractors, suppliers, statutory bodies as well as others who indirectly influence the projects. There is therefore the need for both direct and indirect stakeholders to understand the goal of any construction project during the preconstruction stage as this will set the tone for main construction and post-construction stages.

Traditionally, the performance of construction projects is measured in terms of time, cost and quality. This implies that projects are deemed to have been successful if such projects are delivered to time, within cost and to the specified quality. However, due to changing clients' demand, complexity of projects and advancement in every area of life, project goals are no longer limited to the conventional three legs of time, cost and quality. The introduction of sustainability principle in every sector of the economy especially through the United Nations' (UN) Sustainable Development Goals (SDG) has also affected the measures of project success. In construction, the principle of sustainability is gaining wider attention, and clamour for sustainable construction projects that incorporate the principles of sustainability is on the increase. There is therefore the need for construction projects to adopt sustainable principles such as reduce, reuse and recycle with a view to ensuring that projects are economical, people oriented, environmental friendly and technically appropriate.

The advent of various revolutions including the current Fifth Industrial Revolution (5IR) has not only disrupted common practices in every sector of the economy but has also paved the way for various forms of global advancements and changes. Digitalisation and other principles such as Internet of Everything (IoE), digital twin, customization, smart city and the likes are also gaining popularity among construction stakeholders. The most recent in the construction industry, termed construction 5.0 coupled with sustainability principles, collectively termed sustainable construction 5.0, has affected the view of the industry and this has given rise to other indices of project success. This book therefore provides readers with various indices, indicators and variables of measuring the success, performance and delivery of construction projects.

The book did not only discuss the fundamental measures of projects success, which are time, cost and quality, but also explain other indices such as productivity, satisfaction, profitability, communication, engagement, functionality, health and safety, collaboration, waste management, security as well as environmental requirements and operational performance. The first part of the book explained the concept of sustainability in construction with emphasis on the basis of sustainable construction. The second part consists of chapters that explain various measures of project success. The chapters are arranged starting with abstract, followed by keywords and other important sections before conclusion and references.

The book will be useful for stakeholders concerned with the management and administration of construction and infrastructure projects. These include researchers, educators, governmental bodies and agencies, clients of public and private projects, contractors and developers, professionals and consultants, regulatory bodies as well as users and customers of the construction projects. The book provides information and can serve as literature material on issues such as construction projects, sustainable construction and project performance for stakeholders in the architecture, engineering, construction and operation (AECO) industry.

Ayodeji E. Oke