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Is there any need for Theory in Research?

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Abstract - *Theory is an organized body of concepts and principles intended to explain a particular phenomenon. It allows researchers to make links between the abstract and concrete; the theoretical and the empirical; thought statements and observational statements. The use of theory in research is attributed due to prediction and explanations as well as guidelines for actions and behaviour; provision of structured set of lenses through which aspects or parts of world can be observed, structured or analyze. Therefore, construction economics field as a research area needs theory. The literature review conducted on construction economics discipline shows that the field does not have any theory in existence due to substantial foundation, coherent, consistent and stability in it definition. The field uses theories that emerged from finance, economics, management, and organizational industry to testify it findings and result. But, many efforts were underway by various researchers to establish or develop theories use specifically by construction economics field.*

Key Words: Construction, Economics, Features, Needs and Theory

1. Introduction

Past and present scholars in different discipline have divergent opinion and stance on the needs of theory in research work. This has generated a lot of debate and argument by various scholars in discipline like; Social Sciences, Sociology, Physiologist, Scientist etc. The word "theory" has been given different definition and interpretations by various authors/researchers in different field of study. Theory is being defined as a relationship between two variables. Whereby, prediction or explanation can be set base on manipulation of those variables.

According to Carpiano & Daley (2006), cited by Madara, Namango, & Katana (2016), theory are set of analytical principles or statements constructed to align with our observation, perception and description of the world. And of the person-in-environment configuration whose main facts can be confirmed through scientific method. For instance, engineers has the perception or view that theory is the interrelated-sets of concepts and propositions, arranged into deductive-system to describe relationships about certain-aspects of the world (Madara et.al 2016). However, these various definitions and many others from different field of study have pointed out the main purpose of theory. But, many scholars have different view for the need to use theory in research work.

Whereby, some school of taught has the opinion that research can be conducted without the use or application of theory and such research result is accepted (Glaser & Strauss, 2006). To such researchers it is not every one can be devoted or equally have the skilled to discover theory, but neither to the need to be a genius to generate important theory. Furthermore, if a researcher can be able to carry out a vigorous quantitative verification on his sampling, coding, reliability, validity, indicators, frequency distributions, conceptual formulation, construction of hypothesis, and presentation of evidence and facts, then he/she does not need any theory to test or support his findings. But could such way/procedure called a scientific approach?

On the other hand, some scholars view theory application or use is the only way of testifying and generalizing research work in the world (Fawcett & Downs, 1986; Benetti, 2009; Harriss, 1998; de Valence, 2012; UTDANNING2020, 2012; Madra et.al, 2016; Niss, 2006; Suppes, 1974). They argued that theory used organizes experiences, recognition of complexity, provide a structured set of lenses, and provide a safeguard against unscientific approaches to a problem and to protect against attacks from skeptical or hostile colleagues in other disciplines.

Consequently, in view of the above controversy and argument between the various scholars or class of taught that the paper aim to explore the word theory in conducting research and its important especially in construction economics discipline. Many researches on theory have focuses on the role of theory in supporting or generalizing research result as well as its mandatory use of it before a research should be considered as a scientific work. Several studies have examine or discuss theory in their discipline without stating weather theories should only be used when the needs arises for a specific research or

validation of findings to justify data collected, but should not be applicable to all research as indicated by some researchers (de Valence, 2012; Niss, 2006). While others have concentrated on it various advantages in all kind of research even if it is not a scientific research work (Harriss, 1997; Suppes, 1974). However, the use of grounded theory and empirical data collection can also justify a research finding (Glaser & Strauss, 2006). Hence, a deductive reasoning through the empirical data collection supports findings and fact without any need of theory.

Weighting the two schools of taught evidences and reasoning in a logical and systematic approach indicate when and where theory should be needed in conducting a research work. Also, will reduce the temptation that many young and new beginners in research may have in the use of theory to generalize their findings/result. In addition, to understand the general concept of using theory in the various disciplines, especially in construction economics field where some researcher strongly opposed to its need in the field.

2.0 **The Concept behind Theory Use**.

The connections between theories and research cannot be separated. Research designs are used to develop the various types of theories via-visa theories can be used to adopt the research design to be used. Theory refers to a particular kind of explanation. Leedy and Ormrod, (2005) stated that "theory is an organized body of concepts and principles intended to explain a particular phenomenon". While in the scientific field the word "theory" refers to a general principle of body offered to explain variables. Theory allows the researcher to make links between the abstract and concrete; the theoretical and the empirical; thought statements and observational statements (Carpiano & Daley, 2006; cited by Madara et.al, 2016).

The use of theory in research could be attributed either due to prediction and explanations as well as guidelines for actions and behaviour; provision of structured set of lenses through which aspects or parts of world can be observed, structured or analyze (UTDANNING2020, 2012). Furthermore, it safeguard against unscientific approaches to a problem, an issues or a theme. Through the articulation of underlying assumptions, choices and by making them explicit and subject to discussion. Niss (2006) pointed that theory are useful because they provide predictions of the possible occurrence of a particular event. This shows that there is a link between explanation and prediction, since predictions including a choice between possible scenarios, will often (not always) rely on explanation of causes and mechanisms to predict the future.

2.1 **The Link between Theory and Research**

The relationship between research and theory can be identify through their interwoven in the process of making findings or answers to a particular question in a logical and scientific way so as to produce a solution to such problem. While, theory help such answers or solution by re-confirm it validity and reliability for used. Research is being used to develop theories (Fawcett & Downs, 1986). It is t the method used to gather the data needed for the theory. This is true as long as the purpose of the research is to develop a theory or to test. Conversely, if the purpose is to test a theory, the theory dictates the data to be collected. Another points which show that there is a link between theory and research is the similarities of their purposes (Niss, 2006). For instance, the purpose of theory is to explain or describe a particular phenomenon that is happening within a domain, covered by the theory, similarly, the research tries to explain or describe a particular action, survey or experiment that was conducted in a given area or location. So both words are having the same mission for completion, which is result. In addition, the attributes of theory such as stable, coherent and consistent are common to the research attributes (Madara et.al, 2016).

Similarly, Wacker (1998), cited by Madara et.al (2016) pointed some chain which link theory and research. These to include; 1) Social-reality (Ontology); valid-evidence of that reality (epistemology); means of investigating that context (methodology); means by which we gather evidence (method). 2) That which may inform our understanding of the phenomenon under investigation (Theory as a lens) 3) that which may emerge from study (theory as a new knowledge). Furthermore, theory has the strength to generate new research. Tight (2004) listed 10 reasons or points which show theory is interrelated with research.

In summary, we can say there is a strong relation or link between research and theory which make them to be more important and needs to be use or applied in other to have a complete and recognize knowledge contribution in the world or the field of study.

2.2 **Features of Theory**

The general characteristics of theory and its use has expose to it application in different discipline today. One great feature of theory that made it important is the ability for generalization, which increases our understanding of the real world (Harriss, 1998). Many features of theory were being itemized or listed by different scholars and school of taught, among such are; (Harriss, 1998; de Valence, 2012; UTDANNING2020, 2012; Fawcett & Downs, 1986; Niss, 2006; Madara et.al,

Despite, the good features of theory as shown by table 1 below. Some have the view that theory use has no need in research work (Seymour, Crook & Rooke, 1997). If that is the case, then many research results and finding look aimlessly through life's gallery without a catalogue. Consequently, simple recordings of individual fact or information without any apparatus of generalization or theoretical framework lead nowhere (UTDANNING2020, 2012). Sociologist, interpretivism and empiricism buttress their arguments, that there is no such thing as a well-established unified theory of education which is supported by the majority of educational researchers. Secondly, most theories use in educational research are being borrowed from other fields or authors who do not belong to such field of study, and often do so in rather eclectic or vague ways. Karl marx and Foucault, pointed that basing a research work base on particular theory or set of thinkers will only generate temptation and confusion, which reduce the validity of the result. And also adulterated the thinking of the researcher or what they called it "fashion of the nonsense" (Tooly & Darby, 1998; cited by UTDANNING2020, 2012).

Finally, sociology and their group members fault the use of theory in educational research base on the reasons that most theories that were invoke or borrowed do not have any relevant in most researches, because they do not show or indicates their presence or bearings on what happens between the beginning and at the end of the research.

However, to the positivism and scientist view the needs for theory use in research as a way of generalization, which describe to the world the acceptability and reliability of such research. They argued that interpreting data in order to yield result is insufficient and non significance to that research. Because, a coherent and consistent approach that shows or indicate a relationship between cases base on already established general law needs to be used (Schweber, 2015). They go further stating that focusing on meaning through reconstructing such meaning and understandings can only narrow the result and it used to other researches, due to human errors and deficiencies in making judgments. Although, interpretivist agreed that theory help the researcher by displacing his common sense and allow him to view things in a different way than the subject matters. These and other features made social Sciences, Scientist, Educationist and other discipline to recommend the use of theories in a scientific perspective so as to re-confirm or dis-confirm an event base on establish laws (Harriss, 1998; Benetti, 2009; Niss, 2006; Suppes, 1974; Madara et.al 2016). The table below shows the different features of theory as highlighted by different authors.

Table 1.0 Features of theory

No	FEATURES	DESCRIPTION	SOURCES
1.	Stable	i) Unchanged over a longer cycle of time ii) They are like brushes, everyone has their own and no one like to use anyone else.	Madara et.al (2016), UTDANNING202 (2012), Niss (2006), Snramann & English (2010).
2.	Coherent	i)System have to be linked in a comprehensive and non-contradictory way ii) Harmonize the theory, research and practice.	Madara et.al (2016), UTDANNING202 (2012), Niss (2006), Snramann & English (2010), Silver & Herbst (2007), Malara & Zan (2008). Same as Above
3.	Consistent	i)It should not be possible to arrive at contradictory claims. ii) Align with already founded body of knowledge & observed relation.	Madara et.al (2016), UTDANNING202 (2012), Niss (2006), Snramann & English (2010), Silver & Herbst (2007), Malara & Zan (2008).
4.	Prediction and Explanation	i) Describe a particular phenomenon. ii) Explain how and why a process functions the way it does. iii) Explanation of the natural world in an organized system of accepted knowledge.	Madara et.al (2016), UTDANNING202 (2012), Niss (2006), Snramann & English (2010), Silver & Herbst (2007), Malara & Zan (2008).
5.	Uniqueness	i) One theory must differentiate from another.	

		ii) Same theory use in different field will yield different result.	
6.	Generalizeability	i) The more-areas that a theory can be applied to make the theory a better-theory.	
7.	Conservatism	i) A current theory cannot be replaced unless the new theory is superior in its virtues.	

Similarly, theories differ in respects to origin, nature and state of domain, concept, claims and stability. These features can only testify that theories are not a monolithic in processes or application as in other concepts (Niss, 2006). However, it made its usage very strong and generalizeability in the world. While, most of the features stated by the interpretisim/sociology are strange, hard to understood and have some element of theory usage when careful study.

2.3 **Types of Theory in Research**

Theory are being categorizes into various segment/group by different scholars and authors. Fawcett & Downs (1986) classified theory into three groups; descriptive, relational, and explanatory.

Descriptive theories are the most basic type of theory. They describe or classify specific dimensions or characteristics of individuals, groups, situations or events by summarizing the commonalities found in discrete observation. This kind of theory is being use when little is known about an event or phenomenon in question. Descriptive theory is most use by social sciences researchers (Fawcett & Downs, 1986). It further being classified into naming and classification sub-group. Whereas, the former design the dimensions or characteristics of phenomenon, and the later elaborate that dimension or characteristics in a structurally interrelated manner.

Descriptive theory are generated and tested by descriptive research, also called exploratory research. It usually answers question such as what is this?, what are the existing characteristic of the real world relative to the specific question (Payton, 1979; Diers, 1979) cited by (Fawcett & Downs, 1986).? Whereas, the relational theory specify relationship between dimension or characteristics of individuals, groups, situations or events. They explain how two or more phenomenon are being related to one another in a given event. They can only be developing or generating after the essential characteristic of a phenomenon are known, that is only after descriptive theories have been developed and validated (Fawcett & Downs 1986). While Madara et.al (2016) stated that a relational theory are those theories that emerges slowly, concept by concept, and proposition by proposition in a specific area. Whereby, overtime the concepts and empirical-generalizations emerge and mature. And such kinds of theory are called inductive theory (Madara et.al, 2016).

Analytical scientist uses deductive methods to arrive at theories, while empirical scientist uses inductive methods to come-up at a theory. They normally seek to answer question such as, what's happening here? To what extents do two or more characteristics occurs together (Payton, 1974; Diers, 1979)? They also require measurement of the dimensions of phenomenon in their natural states. Interviews and surveys are two most data instrument use to collect information.

3.0 **Importance of Theory**

Drawing from the discussion so far done in the paper, one would understand many functions as well as needs in the use of theory. Suppes (1974), listed about five (5) important ways in which theory are of benefit to educational research 1) by analogy, 2) by reorganizing experiences, 3) as a device for recognizing complexity, 4) way for solving problem and 5) to avert the triviality of empiricism. While Harriss (1997) pointed that, theory contributes towards someone thinking in a positive direction and appraises such thinking independently. Benetti (2009), cited the use of various models due to the application or interpretation of theories. And such apply models simplify a phenomenon and break it down into separate categories, showing the maximum clarity of their network of dependence from each other. The table 2 below shows the importance of theory in the various discipline of research work.

Table 2.0 Application of theory in various field of research

No	FIELD	IMPORTANCE	SOURCES
1.	Sciences	i) As a research domain where term is always used in papers, books and not-least in Ph.D, Dissertations. ii) It is being used as to analyze data collected through statistical methods or theories of (hypothesis testing analysis of variable etc). iii) The general Psychological theories have been put to use in the field. iv) It is also used in teaching & learning of student through the Pedagogical theories. v) It is used for the studies of the working brain through the neuroscience.	Madara et.al (2016), UTDANNING202 (2012), Niss (2006), Snramann & English (2010).
2.	Social Sciences	i) It is used to shared and form a worthwhile addition to the body of knowledge. ii) It is an approach used to produce ideas of values. iii) Method used to understand strange things in the world. iv) It is used to justfy the outcome of scientific research work. v) Provide an avenue to observed things in different ways and drawn conclusions based on certain parameters as a guide to the research.	Harriss (1997); Schweber (2015)
3.	Engineering	i)They guides research and organizes its ideas. ii) The capacity to generate new-research. iii) They guide the design of study and interpretation of results. iv) A heuristic tool for formulating models that can be tested empirically. v) They connect/Link data and theory by the used of models i) It's only provide relevant predictions, explanations, interpretations and	

4.	Sociology	applications in social research. ii) It help iii) It helps in verifying a particular theory during the course of any given research. iv) It is a secondary need in a research work. v) Theories are only generated or discovered from the help of data systematically obtained from social research. vi) To provide a perspective on behavior-stance to be taken towards data. vii) To guide and provide a style for research on particular areas of behavior. viii) Is a way or strategy for handling data in research, providing modes of conceptualization for describing and explaining	Madara et.al (2016), Nurmi (2008), Carpiano & Daley (2006); Goldfarb & Ratner (2008) Glaser & Strauss (2006)

3.1 **Theory Generating**

Theory generation or discovering have different methods by the various school of taught in research. The sociologists have the view that theories are being generated through a systematic planning, organizing and interpretation of data in social research. This is simple way one can be relatively sure that the theory will fit and work (Glaser & Strauss, 2006). These has agreed with the work and believed of Comte's (1830-1842), that the search for general or universal laws (theories) grounded in observation. But, such assumptions and believed were contended by different researchers (Schwerber, 2015). The contendants argued that the used of facts only such as empirical observation, collected alone cannot establish the truth of a law (certainty).

Schwerber, (2015) citing Keat and Urry (1982), that the main challenge of such believe is that past event cannot justify the future events. i.e from know to the unknown.

Whereas, the scientist and other discipline which believe and agreed that theories can only be generated scientifically and logically, through possible relationship between variables. These variables explain particular case or phenomena by relating them to general covering laws (Schwerber, 2015). Thus, event or phenomena A was caused by the action of B, because A&B are specific instances of a causal law (Neumann, 2006). UTDANNING2020, (2012) stated that, theory can simple be generated through scientific approach, by systematically formulating and organizing ideas to understand a particular phenomenon. These organize set of ideas are then interconnected with one another to give a certain explanation on an event or process. Hunt (1991), cited by Madara et.al (2016) that theories are develop through the collection of (1) Variables (2) a domain (3) interconnectivity of Variables, and (4) Specific predictions and factual-claims.

Furthermore, theory can be developing scientifically, by fitting knowledge into simple explanation about the observed-relations concerning an event. In a stable, coherent and consistent founded body of knowledge, through verification and revision device.

4.0 **Theories in Construction Economics**

The issues concerning theories in use in the construction economics research will dominate this section as follows:

- ✓ Do we have theories in CE?
- ✓ What are those theories?
- ✓ Where do they come from?
- ✓ If not in existence, how can we strive for any?
- ✓ And from what angle?

These and other similar questions in construction economics pose a lot of challenges to the discipline. Construction economics was emerged as a field of study in the mid-1970s. Due to the energy crisis that leads to a surge operating cost (Bon, 2001). Since it emergence various definition were proposed by different authors. For instance Hillebrandt (2000) define construction economics CE as the application of economics to the study of construction firms, construction process and the industry. Whereby, Raftery (1991); and Cooke (1996) agreed and adopted such approach. But, some scholars such as Robbins (1977); Ofori (1990); Gruneberg (1997); and Myers (2004), view construction economics based on the allocation of scare resources in the construction industry for maximum utilization.

Whereas, many scholars describe it as the use of economics theories and process with main focus on building and construction aspect. With these and other similar in consistency in the definition of the CE, that Ofori (1994) stated that construction economics has no accepted definition. These leads to contemplating whether the field have any future development in academic discipline. Because construction economics as a subject of taught needs consensus and agreed definition. Many areas or discipline today are being describe as a bona fide academic discipline, because there is a clear definition of its main concern. Furthermore, there is stability, coherent and consistency in it theory. Does construction economics have such features?

The simple answer to this question is No. because construction economics do not have any theory that support it foundation. But, instead uses theories from economics and management sciences (Voordijk, 2009). Bon (1989) in his book building as an Economic process: An introduction to building economics has proof these statement. Whereby, he said that a consistent framework in describing an economizing behavior in a building that will serves as a foundation of a theoretical framework. And also enhance further development of construction economics.

Similarly, Voordijk (2009), stated that CE as a field of research has no any single theory that underpinning it, but uses only frameworks and concepts to achieve it desire result. His reasons are, the field encompasses various or large number of different topics to be studied. Whereby, the mission is to develop knowledge from design science (science and humanities), which the professionals in the industry will used to solve it problem in the field. In essences CE are discipline that applied others knowledge to yield a result. The field are less in theory development but rather application of others findings and invention (Voodijk, 2009). Ive & Chang (2007) were in the view that construction economics should be look or categories as a sub-discipline of economics. The reasons are citations and authorships across the various journals are made from the main discipline of economics instead of construction. In addition, base on journal classification on construction management and economics within 2000-2006, shows or indicated that there is no any theoretical breakthrough. That recognized as construction economics, but can best be described as the application of economics theories and approaches to the understanding of behavior and explanation of construction field.

We can conclude that construction economics CE as a field of research has no any theory of its own, but rather uses theories and applications of economics and management sciences to achieve its goals. However, it is oriented towards the use of knowledge and understanding in tackling problems and meeting the needs of the client (Voodijk, 2009). And it lacks stability, consistent and coherent in its approach. Furthermore, De Valence (2011) suggested that construction economics can easily develop by applying economics theories to building and construction industry. Such adaptation will enhance it development in establishing a sound theoretical foundations and new research direction for modern CE. That has been loose or missing in the academic cycle today. Brochner (2002), concluded the assumptions of De Valence by stating that construction economics studies is the flow of economic ideas into the discipline of CE rather than the reverse or opposite side. Similarly, both Ive & Chang (2007); Brochner (2002) and De Valence (2011) have the same thinking and observations, that CE depend on the traffic or flow of ideas from the economics discipline. By, abstracting needed requirement in the field

(economics) which are important to the prospects of CE. Finally, Myers (2013) in his book construction economics: A new approach argues that all construction process from conception to demolition is the supportive of economics. However, it does not consider cost as the main aspect, but rather number of theories application that educate professionals in the industry the way it should operate and think. Whereby, an efficient and sustainable economy of the industry can be achieving in the future.

But, since CE do not have theory of its own. Furthermore, is not being recognized as a distinct part of economics. What are those theories it uses? From what mode of discipline? Considering how knowledge is being generated ideally. It can be deduce that CE is not among those areas in which knowledge is being instituted. Giffiths (2004) and Romme (2003) identified three ways in which knowledge is produce; science, humanities and design. It is based on these three categories that construction economics evolved as "science design" knowledge (Voordijk, 2009). Then, it becomes necessary to say that construction economics is a discipline that uses or applied the theories of sciences and humanities to achieve its goals. Similarly, comparing the discipline of sciences and construction economics, one can see that sciences are always towards the discovery of explanation or theories for generalization.

While construction economics is towards the use of existing and established knowledge or theory as earlier stated to solve its problem (Griffiths, 2004). In addition, construction industry phenomena are approached as an empirical object with unique descriptive properties (Voordijk, 2009). In this kind of situation or condition, the focus is to test such hypotheses or assumption drive from the empirical values using theories. Then, it means CE uses others theories to validate its hypotheses or assumptions, instead of generating its own theories.

Also, science discipline has a relatively high level of consensus, stability, coherent and consistency about appropriate questions, methods and analytical framework. Which construction economics, lack such features initially.

Therefore, construction economics CE uses theories from both sciences and humanities. Based on the reasons deduced from (Voordijk, 2009; Griffiths, 2004; Romme, 2003). That is achieving the goal of complexity base on interpretive of phenomena and generalization from established theories. So, one has no doubt that, construction economics is an intermediate between sciences and humanities discipline. Which made it to become or so-called a design science discipline, that combine the knowledge or approaches of sciences and humanities to achieve it aim (Voordijk, 2009). Whereby, a professional in the discipline applied or uses such combined knowledge to solve their problems in the construction industry (Van Aken, 2004). This is why construction economics is not being considered as a respectable academic discipline which has bases in the field of research (Ofori, 1994; Van Aken, 2004; Bon, 2001; Gruneberg, 1997; Myers 2003). This leads to serious debates by various academic researchers in the 20th and 21st century.

In summary, construction economics uses many or various discipline theories such as management, economics, finance, sciences and other field so as to achieve its goal. These happen because it is a field which uses knowledge and understanding of other field. To tackle, it problems and meet the needs of the industry clients.

Conclusions

As an industry, construction economics needs a theoretical framework in order to have a foundation. Such theories will improve the field and made it to be recognizing as a discipline on its own. As pointed earlier in the paper that, the field of sciences, engineering, humanities and other discipline were being faster and simple to understand all their processes due to the use of theory. It is the theories which simplify those complex ideas, norms and relationship in a particular aspect or phenomena.

Even those scholars or school of taught that have the view that such theory should not be applied or used in construction economics. They have contradicted their points by adopting part of scientific knowledge/process to drawn various conclusions in their research work. So, theory use in construction economics becomes imperatives if we really needs to develop the field as pointed out by different researchers.

Consequently, construction economics as a field of research has no any theory in existence. It lacks substantial definition, coherent and consistent theory in the discipline. Another reason is that most citations and authorship of the papers published in most construction management and economics employed or borrowed economics application in trying to solve a particular problem in the construction field. However, the field is more of oriented towards the use of knowledge and

understanding to tackle a particular problem. Instead of initiating or inventing knowledge and understanding as found mostly in the field of sciences and humanities.

So, it is believe that with the use of the knowledge in the various field of study. One day researchers in the construction economics field will come out with an acceptable and agreed definition and theory which is applicable to the field.

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