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Impact of Business Intelligence on Firm's Performance in Cameroon

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Abstract.

Globally, virtually all companies pursue the same goals, which range from increasing revenues and attracting new customers to nurturing a good image, while using the least possible resources. To achieve those goals, many available IT (information technologies) tools and systems have to be used to make the process easier. "Information systems and IT become the metaphors that provide different tools and techniques to the businesses that intend to overcome the challenge of these environments". One of those systems or tools is Business Intelligence (BI). What are the prerequisites to the adoption of BI tools by a given company? What are the significant values that prove that BI leads better performance? To answer to these questions, we have decided to investigate the impact of BI on firm's performance in the Cameroonian context. Our research model is built on the TAM (Technology Acceptance Model), the Extended TAM and the IS Success Model. To test and analyze our proposed model, we used a mixed research method.

Keywords: Business Intelligence, Enterprise Performance, TAM, IS Success Model.

Introduction

The term Business Intelligence (BI) refers to technologies, applications and practices for the collection, integration, analysis and presentation of business information. BI includes a variety of tools, applications and methodologies that enable organizations to collect data from internal and external sources; prepare it for analysis; develop and run queries against such data; and create visual supports to make the analytical results available to corporate decision-makers and operational workers. BI is defined as "a combination of processes, policies, culture and technologies for gathering, manipulating, storing and analyzing data collected, in order to communicate information, create knowledge, and inform decision making"[3].

As Golfareli and Rizzi (2009) put it, "The potential benefits of business intelligence are accelerating and improving decision-making, optimizing internal business processes, increasing operational efficiency, driving new revenues and gaining competitive advantage over business rivals." Thanks to BI systems, companies can easily identify market trends and spot various business challenges, they said. For [3], "BI helps report business performance, uncover new business decisions regarding competitors, suppliers, customers, financial issues, strategic issues, products and services". And Regarding the adoption of this technology, these authors estimate that BI is implemented by 80% of U.S. companies in the U.S.A. and by 50% of European firms. Out of these BI adopters, 89% of them believe that they might lose their market if they don't adopt BI [4]. Cameroonian companies have been following this global trend as an increasing number of them are adopting BI tools for improved performance; they include mobile service providers MTN Cameroon and Orange Cameroun, as well as Jumia or AfrikMarket for e-commerce.

Generally, the BI is marginally used by organizations in Cameroon economic context. But, we can notice that there is effective used of BI by Cameroonian branches of Foreign Companies like Orange, MTN, Jumia or AfrikMarket.

Yet, a number of impediments to adopting BI tools exist, including their heavy cost and the ambiguity about how the adoption of BI impacts firm performance [5-9]. Under such circumstances, a company planning to adopt BI should fully grasp the advantages and significant value added of BI adoption. There is a wide range of studies on BI's impact on enterprise's performance worldwide [7, 8]. However, the Cameroonian context is still under investigation and there remains a long way to go; and this explains the significance this study on the "Impact of business intelligence on company's performance" in Cameroun. The purposes of this study is to show how BI adoption in an enterprise could lead it to a better performance and also to serve as example to others in this economic context. As a reminder, the following research questions will be answered herein:

- How does BI impact on enterprise performance?
- What are the key drivers of BI leading to increased enterprise performance?

Conceptual Model and Hypotheses

For this study, the hypothesized variables and their relationships in the model are being derived from the available literature, and the model is being drawn on TAM, Extended TAM and IS success Model. We combine these models to catch entirely BI success in both individual and organisational level. And variables, from these models, will helps use to have a better measure of firm's performances. Our different constructs and hypotheses are as follows:

Core constructs

Subjectives Norms: A person's perception that most people who are important to him/her think he/she should or should not perform the behavior in question.[10]

H1: Subjective Norms will impact on image.

H2: Subjective Norms will impact on Perceived Usefulness.

Image: The degree to which the use of BI is perceived as being able to enhance one's status in one's social system[11].

H3: Image will have positive effects on Perceived Usefulness.

Output Quality: Is about how BI will impact one's ability to well perform a job.[11]

H4: Output Quality has a positive impact on Perceived Usefulness.

Result Demonstration: is about how easy is to show the benefits of accepting BI.[10]

H5: Result Demonstration will have positive effects on Perceived Usefulness.

Job Relevance: the adequate application of BI in the job to do.[11]

H6: Job Relevance will have positive effects on Perceived Usefulness.

Perceived usefulness of BI: is "the degree to which a person believes that using a BI system would enhance his or her job performance" [12].

H11: Perceived Usefulness will significantly impact the Attitude Toward Using BI

H14: Perceived Usefulness will significantly impact the Intension to Use BI.

Perceived ease of use: is defined as "the degree to which a person believes that using a particular system would be free of effort"[12].

H12: Perceived ease of use will positively impact Perceived Usefulness of BI

H10: Perceived ease of use will positively impact the Attitude Toward Using BI.

Service Quality: Service quality refers to through the following attributes: tangible, reliability, responsiveness, assurance, functionality, interactivity, and empathy [13-15].

H20: Service quality will impact the Intension to Use BI.

H21: Service quality will impact the Satisfaction.

System Quality: it is "concerned with whether or not there are bugs in the systems, the consistency of the user interface, ease of use, response rate in interactive systems, documentation, and, sometimes quality and maintainability of the of the program code" [16].

H17: System Quality will impact the Intension to Use.

H19: System Quality will impact the Satisfaction.

Information quality: it is "concerned with such issue as timeliness, accuracy, relevance, and format of information generated by BI" [16].

H16: Information Quality will impact the Intension to Use.

H18: Information Quality will impact the Satisfaction.

Attitude toward using BI: evaluation of an attitudinal object either representing a positive or negative valence [10, 17-18, 28-31].

H15: The Attitude Toward Using BI will have a direct positive impact on the Intention to Use

Intention to use BI: It is “the degree and manner in which employees utilize the capabilities of an e-government system” [19].

H23: Intention to Use will have direct positive effect on Use.

Satisfaction: it is defined as the “system user’s satisfaction with regard to system speed, number of functions, quality and format” [20].

H22: Satisfaction will impact positively Job Satisfaction and Intension to Use.

Use of BI: it examines the actual use of BI, the extent of use of BI in the users’ work, and the number of system applications used in the users’ work [21].

H24: The Use of BI will impact the Satisfaction.

H30: The Use of BI will impact the Job Satisfaction.

Job satisfaction: it is concerned with examining the successful interaction between BI and its users[22].

H26: Job Satisfaction will positively impact the Satisfaction.

H27: Job Satisfaction will positively impact the Job Performance.

Job Performance: it examines the impact of IS on the users’ performance [21].

H28: Job Performance will have a positive direct impact on Financial Performance.

H29: Job Performance will have a positive direct impact on Market Performance.

Financial performance: it is concerned with Customer retention, Sales growth, Profitability, and Return on investment.[5]

Market performance: it refers to the entering of new markets, the introduction of new products or services more quickly than competitors, and to the implementation of the best success rate for new products or services and market shares.[5]

Moderating constructs

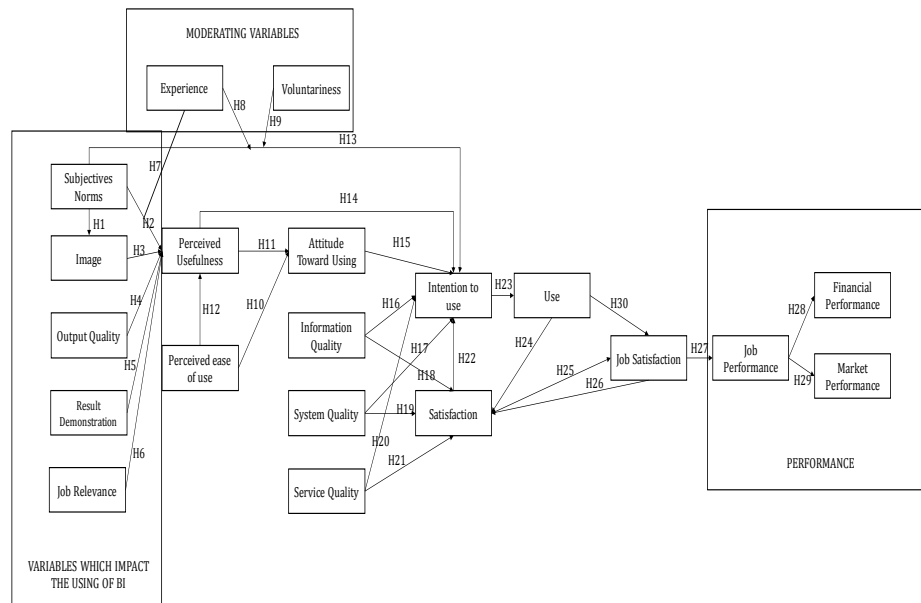
Experience: is define as previous contact or easy use of IS technologies[11]

H7, H8: “The direct effect of Subjective norm on intentions may subside over time increased system experience” [11].

Voluntariness: “extend to which potential adopters perceive the adoption decision to be non-mandatory” [11]

H9: Voluntariness will significantly impact the relationship between Subjective Norms and the Intention to Use.

Our proposed research model for this study adapted from IS Success Model[23], TAM model[24, 25] and extended TAM [11] is being designed as follows:

Fig. 1. Research model

Methodology

A mixed methods research is used in this paper to test and analyze the adopted model research. [11, 26] defined the mixed methods research as a method combining quantitative and qualitative conceptions in the same research study, and which is developed in response to the observed limitations of such conceptions. For our model, we started with a quantitative study, which was followed by a qualitative study in order to better understand and justify result of the quantitative research. This study was carried out in an enterprise that used BI tools like MTN Orange Jumia AfrikMarket. The first step of the study will consist on conducting multiples interviews to obtain viewpoints about BI and Cameroonian Enterprise performance; this will be follow by a pre-test phase, and after with a pilot study and will proceed with collect of data in those enterprise by using Google forms. This approach is recommended by Frippiat and Marquis [27]. Its main advantages are twofold: (1) the possible to surpass the geographical constraints and (2) the wider follow-up of BI development. Our structural research model will be tested with SmartPLS 3.2.7 software.

Expected Contribution

This research is expected to help understand the impact of Business Intelligence on Companies performance in the Cameroonian environment. The purposes of this study is to show how BI adoption in Cameroon economic context could lead firms to a better performance and serve as example for others in the same economic context. To achieve our goal (give answer to all our questions), we used a mixed research method to allow a better contribution to the existing literature on Business Intelligence and Enterprise Performance.

While this study is just at the step of reviewing literature, it harbors some limits. Firstly, as the study was conducted in the Cameroonian context, there is some geographical limitation, coupled with the fact that the country has few companies that are already implementing BI tools. As a result, it will be difficult for us to collect data. Secondly, given the magnitude of our proposed research, the target population may not give objective answers to questions (in our forms), which could distort our final results. Lastly, studies about BI and Firm's performance in Cameroon and surrounding countries remain inadequate in terms of number. In order to remediate with that, we will carry a complementary qualitative study which can be a case of study on one of those companies which use BI in Cameroon.

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