

# IMPACT OF BI USE ON PROCESS LEVEL PERFORMANCE (STUDY IN PROGRESS)

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## PROJECT SUMMARY:

Despite huge investments in Business intelligence (BI) systems and their increasing adoption in enterprises of all sizes and in different industry sectors across the world, many firms are not yet successful in assimilating and exploiting their potential. Though a lot of research was carried out explaining the factors influencing the adoption of BI systems, research related to their use and their impact on firm performance in post-adoption environments is limited. This study investigates the relationship between BI systems use and process level performance with IT infrastructure capability as the mediating variable and will analyse the influence of industry type, firm size and length of BI system usage on the relationship. The findings will help both practitioners and researchers in the BI domain and performance management domain.

## BACKGROUND & CONTEXT:

- Study of BI systems – driven by industry
- Anecdotal and very few empirical studies on BI use and in post-adoption environments (Jasperson et al 2005, Jourdon et al 2008, Seah et al 2010)
- Widespread BI implementations with ambiguous benefits and varying implementation success and effectiveness (IDC 2012, Gessnor & Volonio 2005, Watson et al 2006, Jourdan et al 2008)
- Past studies - BI implementation critical success factors (Yeoh & Koronios 2010); BI maturity models (Lahrmann et al 2011); Data collection strategies for BI implementation (Ramakrishnan et al 2011); Culture in BI implementation (Seah et al 2010); Organisational capabilities with BI assimilation (Elbashir et al 2011)
- IT infrastructure capability – a potential key enabler (Mithas et al 2007, Fink & Neumann 2007) in BI adoption & its effectiveness
- Benefits of IT innovations seen best at process level and no proper analysis of the impact of BI use (or non-use) (different from BI adoption)

## RESEARCH QUESTIONS:

- How does BI systems use impact firm performance at process level?
- How do organizational IT infrastructure capabilities influence the relationship between a firm's BI use and process level performance?
- How do the industry types, firm size, BI scope and length of BI system use influence the relationship?

## IMPLICATIONS OF FINDINGS:

- Measuring and understanding the impacts of BI systems use on process level performance (a leading indicator to firm performance), will offer insights and guidelines to practitioners in managing the post-BI adoption environment effectively and help gain better returns on investments made.
- With each IT innovation being unique in terms of its heterogeneous applications, its qualitative and quantitative impacts, this new knowledge on BI systems use and the role of IT infrastructure capability will help firms manage their IT management processes better.
- Findings will contribute to the knowledge on resource based view and dynamic capability perspectives in BI context.

## RESEARCH METHODOLOGY:

- Field Survey Method - A questionnaire with Likert scale (1 to 7)
- Purpose sampling – Organizations that use BI systems (of any BI software)
- Potential respondents - IT managers, BI managers, BI analysts, BI Users and/or Functional managers
- Validated items from literature review & past empirical studies
  - BI Use (12 items) - INDEPENDENT VARIABLE
  - Process level performance (24 items) – DEPENDENT VARIABLE (Elbashir et al 2008, IDC 2012)
  - IT infrastructure capability - MODERATING VARIABLE (10 items) (Fink & Newman2007, Chen et al 2011)
  - CONTROL variables – firm size (number of employees, annual revenue), industry type, number of years BI system in operation, number of regular users, respondents' BI experience and level

## RESEARCH MODEL & HYPOTHESES:

H1: Organization's BI usage will positively enhance organizational process level performance  
 H2: Organizational IT infrastructure capabilities will moderate the impact of BI usage on organizational process level performance

In addition, the following other propositions that indicate the effect of control variables will also be analysed in this study.

H3: Larger the size of the firm, higher the effect of BI usage on Process level performance  
 H4: Longer the time since adoption, higher the effect of BI usage on process level performance  
 H5: Effect of BI usage on process level performance is different for different industry types

