

Digital Business Intensity and Entrepreneurial Alertness in Organizational Learning

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Abstract

Key issues that face firms is the dynamic business environment, calling for managers to be alert for emerging opportunities, and leveraging on them ahead of competitors to enhance their competitive advantage. Digital Business Intensity (DBI), described as the rate of investment in digital resources is credited as an enabler of firms' process improvement and organizational performance. We propose an organizational learning framework to show that, through DBI, firms stand to enhance their entrepreneurial orientation (EO) and entrepreneurial alertness (EA) for easy opportunity identification and conversion for competitive advantage. The model also proposes a positive mediating effect of EO on the relationship between DBI and EA. Findings from this model stands to contribute to literature and theory development by testing both EO and EA concurrently. This study has practical implications of providing insights to small businesses managers/owners in increasing their DBI to leverage on emerging opportunities for competitive advantage.

Keywords

Digital Business Intensity, Entrepreneurial Alertness, Entrepreneurial Orientation.

Introduction

In a raging turbulent technological environment, managers need to stay alert for opportunities emerging from the market to make strategic decisions that lead to competitive advantage (Roundy et al. 2018). Entrepreneurial alertness (EA), is described as the degree to which individuals in decision making capacities sense and identify emerging opportunities in the rapid-changing business environment (Roundy et al. 2018). The robust turbulent business environment require managers to be constantly aware of changes in the market and sense opportunities that drive organizational performance (Roberts et al. 2016).

The advent of sophisticated techniques such as big data analytics has increased firms' EA, where managers can analyze market trends for opportunities identification (Chen et al. 2012). Essentially, there is little doubt about the potential of business success resulting from integration of digital technologies into activities that lead to EA. However, the investment in these technologies may be costly making big-size organizations as salient beneficiaries, given their easy access to capital from shareholders (Angst et al. 2017). Moreover, small firms suffer from knowledge gaps, leading to lack of understanding and awareness of existence of technologies such as big data analytics that can benefit their operations and performance (Coleman et al. 2016). Notwithstanding such potential, little theoretical explanations exist that explain how technologies are utilized to improve firms' entrepreneurial alertness in the context of small businesses.

Entrepreneurial orientation (EO) on the other hand is described as organizational practices in strategy formulation (Lumpkin and Gregory 1996). For firms to be alert in the market, they first need strategies for keeping abreast with the market in order to stay ahead of competition by being proactive to opportunities. Therefore, intelligence gathering stands as a first step before formulating these strategies.

Digital Business Intensity (DBI), a measure of investment in technology has emerged as an antecedent to efficiency in terms of processes innovation (Nwankpa and Roumani 2018) and organizational performance (Nwankpa and Datta 2017). DBI refers to the amalgamation of technologies that help business gather market intelligence by engaging customers through mobile platforms and social media, and strategic decision making using big data analytics (Nwankpa and Datta 2017). Given the potential of DBI in organizational process and organizational performance, we seek to explore how DBI can as well lead to EO, and EA improvement in the context of small businesses. We pose the following research questions:

- i) *How does DBI influence entrepreneurial alertness in small businesses?*
- ii) *How does DBI influence entrepreneurial orientation in small businesses?*
- iii) *Does entrepreneurial orientation influence the direct relationship between DBI on entrepreneurial alertness?*

Understanding how investments in digital resources stand to aid small business managers make informed IT investments decisions that work towards their objectives of scaling their markets through opportunities identification. We build on organizational learning theory, where we posit that, EA requires managers to learn about their environment, and with the potential of IT in helping managers learn about opportunities in the market (Chen et al. 2012; Roberts et al. 2016), the intensity of investment in the IT (DBI) shall eventually influence the learning process.

Literature Review and Theoretical Background

Organizational Learning Theory

Organizational learning theory describes the learning process as that which involves changes in tactics in response to changes in the dynamics business environment (Argyris and Schön 1997). The process of organizational learning begins from an individual, who acquires knowledge and shares it with others in the organization. Organizational learning is key to enterprises' exploration of strategic renewals that lead to firm performance (Lumpkin and Lichtenstein 2005). To facilitate proactiveness in opportunity identification, organizations need to be in constant environment scanning to learn about changes as they happen. Given that organizational learning entails developing strategies for robustness with changing business environments, we find this theory suitable for explaining how small businesses may replicate the same by using DBI as a strategy for constant awareness of emerging market opportunities.

Digital Business Intensity

DBI is described as firms' intensity of investment in digital resources such as social media, cloud computing, and data analytics as a strategy that leads to improved firms' outcomes (Nwankpa and Datta 2017; Nwankpa and Roumani 2018; Westerman et al. 2012). Among areas that have been positively influenced by DBI include firm process improvement (Nwankpa and Roumani 2018), and firm financial performance (Nwankpa and Datta 2017). Firms' investments in DBI is viewed as development of IT portfolio that leads to capability building in the dynamic business environment, driven by technology advancements (Nwankpa and Roumani 2018). Firms that have mature digital investments are associated with huge financial profits as compared to those that are conservative in IT investments (Westerman et al. 2012). Therefore, the higher the investments in digital assets, the higher the firm meet its performance goals. Therefore, companies that seek high entrepreneurial alertness need to invest in digital resources that help them learn about opportunities and disruptions and act appropriately in their responses.

Entrepreneurial Orientation

Entrepreneurial orientation is described as a set of processes and activities that lead to development of strategic decisions (Lumpkin and Gregory 1996). These activities have been described as related to proactivity, innovativeness, and risk-taking (Wiklund 1999). Proactivity refers to anticipatory of new changes in a business environment, whereas innovativeness refers to supporting and accepting changes, while risk-taking involves willingness to invest huge amounts of resources to explore these new opportunities and innovations (Wiklund 1999). For organizations to be proactive and innovative, they need to have systems that support a learning culture, so that they may be well informed in their pursuit of risk-

taking activities in quest of performance. Therefore, a firm needs to invest in digital resources that help in learning opportunities that lead to entrepreneurial alertness.

Entrepreneurial Alertness

The concept of entrepreneurial alertness refers to a cognitive based information processing art of opportunity identification (Gaglio and Katz 2001). Alertness means being able to judge situations based on changes in the environment and judging their potential of bringing profitability to a firm (Tang et al. 2012). Although studied in different dimensions, i.e. as a framework (Roundy et al. 2018; Tang et al. 2012) and as a construct (Li 2012), entrepreneurial alertness maintains its advocacy of opportunity identification. Entrepreneurial alertness is defined in four dimensions including; juxtaposing, embellishing, prospecting, and unlearning. Juxtaposing refers to the utilization of knowledge stored in a mental schema and comparing it with environmental information to improve self-awareness of opportunities (Li 2012). Unlearning on the other hand is described as the ability to delete chronic schema to facilitate new knowledge development, while prospecting is the ability to reflect something into the future (Li 2012). Finally, embellishing is described as the ability to deconstruct a prospect into its future state based on prior knowledge (Li 2012). Based on the definition of the four dimensions of entrepreneurial alertness, it becomes clear that entrepreneurial alertness incorporates a learning process with a feedback loop, thus complements learning process as prescribed by organizational learning theory.

Research Model and Hypotheses

Our research model applies organizational learning framework to investigate the interplay between DBI and entrepreneurial orientation and entrepreneurial alertness. Entrepreneurial orientation has been described as having the possibility of shaping entrepreneurial alertness (Mole and Adomako 2017), thus our study also seeks to explore this relationship.

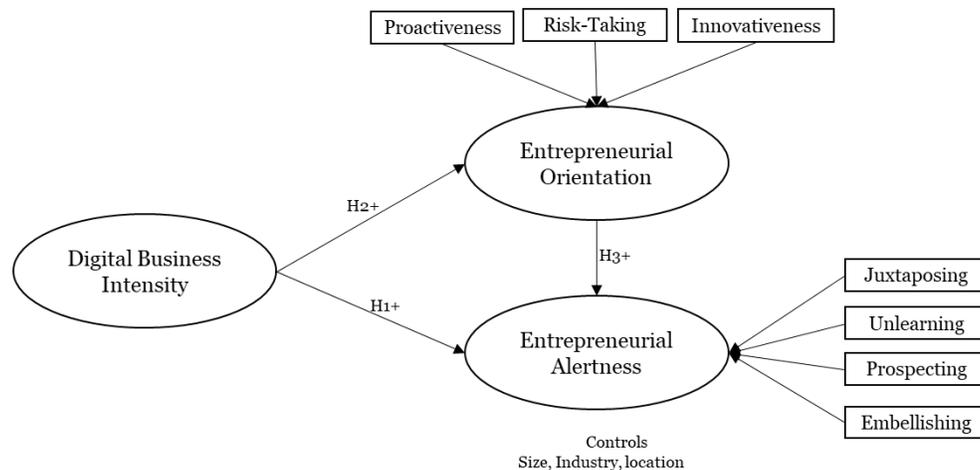


Figure 1. Research Model

Digital Business Intensity and Entrepreneurial Alertness

DBI is associated with organizational learning through business analytics that uses past and current market trends to predict future market trends (Chen et al. 2012). Even without investment of sophisticated business analytics programs, firms can develop entrepreneurial alertness through reading online customer reviews (Zhou et al. 2018), or engaging customers in ideation crowdsourcing (Brunswick and Vanhaverbeke 2015). Through such mediums, organizations get to learn about customer needs, which open opportunities that can be explored to fulfill these needs. Thus, the decision-making authority can use the knowledge acquired to build mental schema that is useful for comparing information from environment and delete old

schema for embellishing new prospects (Li 2012). Thus, the higher the investments in such digital resources, the more the chances for opportunity identification through prospecting and embellishment. We therefore hypothesize that:

H1: Firms' digital business intensity is positively related to entrepreneurial alertness.

Digital Business Intensity and Entrepreneurial Orientation

A proactive organization is one that invests resources that help in improving manager's judgement process before planning to engage in a risk-taking initiative. Entrepreneurial orientation is conceptualized as a learning process that leads to firms acting in an entrepreneurial manner (Lumpkin and Gregory 1996). Thus, entities need to be exposed to knowledge in order to successfully learn this process. Knowledge gathered from the EO process is attributed to firms' effective and efficient decision making, leading to increased financial performance in firms (Lumpkin and Dess 2001; Lumpkin and Gregory 1996). Therefore, the continued exposure to knowledge shapes managers' EO, which leads to favorable outcomes as far as firm performance, is concerned. Performance could be in financials, improved processes, or other actions that lead to firm competitiveness. With the possibility of digital resources through analytics and business intelligence exposing managers to different knowledge about the industry, we propose that the level of investments in DBI has influence in a firms' EO such that high investments lead to high knowledge exposure leading to high EO.

H2: Firms' digital business intensity is positively related to entrepreneurial orientation.

Entrepreneurial Orientation and Entrepreneurial Alertness

Entrepreneurial orientation is described as the methods and process that firms use to act in an entrepreneurial manner (Lumpkin and Gregory 1996). It thus, can be inferred that entrepreneurial orientation is a process that leads to entrepreneurial alertness, which is a mental state of new opportunity exploration (Li 2012). Entrepreneurial orientation is perceived as a process of learning about opportunities, whereas entrepreneurial alertness is a state where a firm is ready to explore opportunities. Thus, it is arguable that a firm entrepreneurial orientation enhances the state of entrepreneurial alertness. Entrepreneurial orientation is positively linked to performance (Wiklund 1999), thus it can lead to positive state of entrepreneurial alertness.

We thus hypothesize that:

H3: Firms' entrepreneurial orientation is positively related to entrepreneurial alertness.

In our research model, we also propose that the state of entrepreneurial alertness shall depend on the size of the firm and the industry it belongs. We, thus, add firm size and industry as control variables.

Methods and Analysis

Measurement items for this study are to be adopted from prior studies that have validated their validity and reliability. The measures of DBI are adopted from Nwankpa and Datta (2017), while EO dimensions are adopted from Lumpkin and Dess (2001). EA measures are adopted from Eggers and Smirlo (1996) and Li (2012). To test the hypotheses in the conceptual model, we propose to conduct an online survey, whose participants include small business owners and managers of small businesses, who shall be required to answer questions based on the choice of answers measured on a Likert Scale ranging from 1-7, from 'strongly agree' to 'strongly disagree'. Likert Scales are recognized for their unique ability of capturing attitudes that reasonably represent measurements on a proper metric scale (Bertram 2007).

For path analysis, we expect to perform Structural Equation Modelling using SmartPLS 3.0 by Ringle et al. (2014) due to its reliability, given its wide application and robustness to sample sizes. Among the analysis, we plan to test instrument reliability and construct validity through confirmatory factor analysis, where we shall analyze composite reliability and average variance explained values respectively (Hair et al. 2012).

Expected Contributions

This research is expected to enrich organizational learning theory by applying IS concepts of digital resources to show how organizations can increase their knowledge base for competitive advantage. The study also stands to enrich EA and EO literature by applying these constructs in the IS context. Based on the results, small business managers stand to understand how they can utilize technology for opportunity identification leading to innovation and competitive advantage.

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