

Organizational Resources, External Environment, Innovation and Firm Performance: A Critical Review of Literature

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Explaining why organizations in the same industry and markets differ in their performance remains a fundamental question within strategic management circles. Researchers have partly attributed the variation to a number of factors among them industry structure, resources of a firm, and continuous innovation that keep a firm a head of competition. On a global scale, there is continued search for the sources of variation in firm performance. As part of this effort, this paper reviews literature on factors that have partial explanation to variation in organization performance namely: organizational resources, external environment and innovation. It is apparent from literature that organization resources have a direct impact on performance. However, this influence is subject to other factors key among them the external environment and innovation. In an attempt to bring out extant gaps on how the resource - performance relationship is influenced by the external environment and innovation, this paper observes that these factors have been found to have independent effect on performance. However, their role in this respect remain scanty, both conceptually and empirically. To contribute to the current state of knowledge in this front, the paper proposes a conceptual model that can guide an empirical investigation on the influence of external environment and innovation on the relationship between organizational resources and performance. The empirical research, it is hoped will address the identified gaps.

Key Words: *Resources, External Environment, Innovation, expected firm Performance.*

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Introduction

Research in the field of strategic management has inconclusively sought to explain drivers of performance and causes of variation in performance. Hult et al. (2007) posited that the quest to discover the determinants of firm performance has long been central to the strategic management field while Teece et al. (1997) observed that numerous theories have been advanced about the sources of competitive advantage; many cluster around just a few loosely structured frameworks. Some of the prominent frameworks include the resource based view (Wernerfelt, 1984; Helfat and Peteraf, 2003; Marino, 1996), the external environment (Bourgeois, 1980; Miller and Friesen, 1983) and the firm's innovative capability (Child, 1997). The multi-faceted nature of organization performance and its measurement is likely to become even more complex as stakeholder expectations about companies' economic, social and environmental responsibilities change. As performance measurement keeps mutating with greater focus shifting towards intangible and non-financial aspects such as social and environmental performance, the paradigm dictates a move towards greater prominence of intangible resources (knowledge, capabilities, culture, technology) and innovation as drivers of performance.

There is a direct relationship between resources and organizational performance (Amit and Schoemaker, 1993; Barney, 1991). According to Penrose (1959), firms perform differently because of the way they deploy their resources. However, this

relationship cannot sufficiently and completely explain variation in organization performance, the reason being some firms with large resource bases have been outperformed by emerging technology driven and knowledge based companies such as Samsung, Facebook and Google. We attribute such variation to adaptation to the changing environment consistent with Johnson et al. (2008) and the unique bundling of resources (specifically knowledge and technology assets) to create innovative firms that outclass competitors and return above average rents Teece et al. (1997). The continuous adaptation aimed at matching and deploying institutional strengths (resources) with environmental opportunities and threats has a moderating effect in the resource-performance relationship. This paper makes the proposition that firm resources can be configured using capabilities or competencies and leveraged for superior performance by matching the resources with the external environment through innovation.

This paper seeks to establish the moderating effect of the external environment and the intervening effect of innovation on the resource-performance relationship. Darfus et al., (2008) attribute difference in performance to resource heterogeneity; Collis, (1994) to resources and capabilities; Hall et al., (2008) to innovation; and Ortega-Argilés et al., (2009) to environmental fit among others. The review of extant literature makes apparent the resource-performance relationship. The other

variables (innovation and the external environment) have been extensively investigated as well. However, none of these studies have integrated the three aspects and investigated their joint effect on performance. The paper seeks to review literature to establish the intervening effect of innovation and the moderating effect of the external environment on the resource-performance relationship.

Theoretical Foundation

This study is anchored on the resource based theory, dynamic capabilities theory, open systems theory and the industrial organization economics theory whose key paradigm is the structure-conduct-performance. The resource-based theory (RBT) proposes that intangible resources, underlie value creation (Penrose, 1959). According to the RBT, the bundling of resources creates the potential for complementarities, or conditions in which the total value creation and appropriation potential of the bundle are greater than the sum of its parts (Amit & Schoemaker, 1993). Resources are used in production, to manage the external environment, spur innovation and secure sustained performance. Dynamic capability is the firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments (Teece et. al., 1997). Dynamic capabilities thus reflect an organization's ability to achieve new and innovative forms of competitive advantage given path dependencies and market positions (Leonard-Barton, 1992) as cited in (Teece et.al, 1997).

The external environment has been explained by the industrial organization economics under the structure-conduct-performance (SCP) paradigm (Mason, 1939) and the open systems theory (Von Bertalanffy, 1950) while innovation has been explained by entrepreneurial and knowledge-based theories (Michailova and Hutchings, 2006). Porter (1980, 1985) posits that the RBV developed as a complement to the industrial organization (IO). The IO focuses on the structure conduct-performance paradigm (SCP). The IO posits that the determinants of firm performance lie outside the firm, in its industry's structure. Thus. the RBV complements the IO rather than replace it.

The Open systems theory posits that organisations are affected by factors that occur in the external environment and they can have an effect on factors that exist in the internal environment (Burnes 1996). Innovation is underpinned by the knowledge based view which has its roots in the resource based theory. It grew out of the realization that knowledge is not just one of the firm's resources, but the firm's most important resource. In order to remain competitive, firms must efficiently and explicitly manage their intellectual resources and capabilities (Zack, 1999).

Previous Studies and Knowledge Gaps Organizational Resources and Innovation Axis

Several scholars have defined resources variously, (Johnson, Sholes and Whittington, 2008; Itami, 1987; and Marino, 1996). They contend that resources are

assets, knowledge, capabilities, and organizational processes that enable the firm to conceive and implement strategic decisions. Resources are inputs into the production process and can be tangible or intangible. Tangible resources include the financial and physical assets that are identified and valued in a firm's financial statements, such as capital, factories, machines, raw materials and land. Intangible resources are generally more difficult to measure, evaluate, and transfer and include employee's knowledge, experiences and skills, firm's reputation, brand name and organizational procedures. Penrose, (1959) posited that firms performed differently because of the way they deployed their resources.

Van de Ven (1986) defined innovation as the development and implementation of new ideas by people over time while Lundvall (2007) defined innovation as new products, new processes, new raw materials, new forms of organisation and new markets. The process is resource driven and identified by new ideas through people (the knowledge dimension). It has been observed that the production of new goods reflects innovative activity which has been successful (Hall et al., 2009; Geroski and Mazzucato, 2002). Innovation is widely considered a crucial source of competitive advantage and survival in the dynamic environment (Dess and Picken, 2000). The intensification of global competition has resulted in the emergence of new approaches for innovation. Organisations innovate to adapt to their external environment and to respond

to perceived external and organisational changes.

The origins of the resource-based view (RBV) can be traced back to the works by Selznick (1957), Penrose (1959), Chandler (1962) and Williamson (1975), where emphasis was put on the importance of resources on organizational performance (Conner, 1991; Rumelt, 1984; Rugman and Verbeke, 2002). Wernerfelt (1984) gave prominence to the RBV when he observed that a firm's internal resources are primary predictors of superior performance. Firms within the same industry with different stocks of resources and capabilities were thought to perform differently due to superior information about the expected value of resources (Barney, 1986).

Researchers (Bönte, 2003; Hall et al., 2008; Ortega-Argilés et al., 2009) among others have investigated the presence of links between firm performance and product innovation. Danneels (2002) studied how, over time, product innovation leads to organisational renewal and could therefore be considered a dynamic capability. Kostopoulos and Spanos (2006) opine that sustainable competitive advantage is the outcome of resource selection, accumulation and deployment, and is based upon the premise of firms' resource heterogeneity. Iansiti & Clark (1994) and Leonard-Barton (1995) contend that the presence of different organizational resources and capabilities positively affects the outcome of the innovation process and, thus, can be used to extend the findings on the firm's capacity to innovate.

Strategic management theorists posit that resources internal to the firm are the principal drivers of firm profitability and strategic advantage due to new products, new technology, and shifts in customer preferences. Availability of financial resources can expand a firm's capacity to support its innovative activities (Lee et al., 2001) whereas the lack of financial funds may limit firm level innovation (Helfat, 1997). Technical resources (e.g., engineering and production equipment, manufacturing facilities, IT systems) have also been found to positively affect innovation (Song & Parry, 1997).

According to the RBT, not only must firms be able to create knowledge within their boundaries, but they must also expose themselves to a bombardment of new ideas from their external environment in order to prevent rigidity, to encourage innovative behavior, and to check their technological developments against those of competitors (Leonard-Barton, 1995). Firms in the same industry perform differently because, even in equilibrium, firms differ in terms of the resources and capabilities they control (Amit and Schoemaker, 1993; Barney, 1986; Dierickx and Cool, 1989). Barney (1991) posits that resources must be advantage creating and must be valuable, rare, inimitable and non-substitutable (VRIN). The valuable resource must permit the firm to conceive of, or implement strategies that improve its efficiency and effectiveness by meeting customer needs. The RBT views organisations as being members of coalitions in a constant state of change

(Pfeffer and Salancik, 1978) while Helfat and Peteraf (2003) argue that the RBT provides an explanation for competitive heterogeneity based on the premise that close competitors differ in their resources and capabilities in important and durable ways.

These differences in turn affect competitiveness and performance. The basic logic of the RBV is the assumption that the desired outcome of managerial effort within the firm is a sustainable competitive advantage (SCA). Firms respond to competitive forces through innovation. As such, resources play a critical role in the firm's ability to withstand external environmental pressures through innovation to ensure superior performance. New products allow companies to exploit the stock of technological and commercial knowledge, to move into different competitive intensity sectors or to serve different market segments (Barney (1991). Grant (1996) argues that levels of durability, transparency, transferability and replicability are important determinants.

Tiger and Calantone (1998), in their study of the US software industry found that thorough customer knowledge enhances new product development. Similarly, Helfat and Raubitscek (2000) argued that market knowledge could form the foundation for generating multiple new product lines, while Whittington et al. (1999) in their study of large European firms confirmed that systemic change and innovation is high in organizations with increased knowledge intensity. Collis, (1994) posited that if

resources provide the inputs, then organizational capabilities represent the firm's capacity to coordinate, put it in productive use, and shape inputs into innovative outputs. Lynn et al. (1999) studying high technology US firms found a positive relationship between learning and innovation.

Research on the evolution of organizational capabilities suggests the promise of dynamic resource-based theory in answering the question of how and why organisations perform differently (Helfat, 2000). Dynamic capabilities may be understood as the way resources, talents and processes are combined and used (Teece et al., 1997). Johnson, Scholes and Whittington (2008), define strategic capability as the adequacy and suitability of the resources and competencies of an organization for it to survive and prosper. They contend that the competitive advantage of an organization is explained by the distinctiveness of its capabilities. Firms with resources that permit them to produce at lower costs in relation to other businesses with inferior resources or capabilities are able to achieve extraordinary profits compared with others. The emphasis is not just on what resources exist but on how they are used that brings about efficiency and effectiveness of the resource (Johnson, Scholes and Whittington, 2008).

Leonard and Barton (1992) define dynamic capabilities as the firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments. While Dierickx and Cool

(1989) emphasize the importance of asset accumulation processes for achieving superior output market positions. Amit and Schoemaker (1993) focus on information-based processes to deploy, rather than accumulate resources.

Organizational Resources, the External Environment and Innovation Linkage

Organizations operate in an open system, the environment, which is characterised by turbulence, dynamism, and resource munificence among others. As such, organizations are environmental dependent and environment serving. They depend on the environment for resource input and produce goods or services for the consumption by the environment. Resources provide the means by which the organisation innovates, grows and expands, exploits external opportunities, satisfies a variety of stakeholder needs and ultimately outperform competitors.

Burgeois (1980) and Kropp and Zolin (2005) take cognizance of the fact that the interaction between the environment, resources and innovation is reciprocal. They posit that radical innovation that might change the architecture of an industry could increase the dynamism of a particular industry and vice versa. Resource scarcity compels firms into an innovative mindset with the view to increasing process and product efficiency while ultimately creating SCA. Many enterprises are continuously attempting to develop new and innovative ways to reinforce their competitiveness. Cohen and Levinthal (1990) posit that innovative firms acquire superior,

absorptive, firm-specific and inimitable capacity, and can foster innovation opportunities. Innovative activity provides an inexhaustible source of CA and long-lasting success.

Organisation actions, processes and outcomes are appraised and moderated to a great extent by the environment within which the organisations operate. Fiol (2001) argues that in the current, more competitive environment, the skills/resources of organizations and the way organizations use them must constantly change to produce continuously changing temporary advantages. Extant literature is far from defining the means by which organisations can mutate continuously. This paper makes the proposition that innovation is a primary means for organisational mutation, transformation and adoption. Argyris (1996a) posits that in a changing environment, firms must continually acquire, develop and upgrade their resources and capabilities if they are to maintain competitiveness and growth.

Machuki and Aosa (2011) established that the external environment accounts for variation in corporate performance. The environment can be perceived as a source (munificence), competition and change (dynamism and complexity) and/or as a market source (growth) among others. But as Bourgeois (1980) observed neither a single set of constructs nor a single set of measures is widely accepted, making it difficult to build a comprehensive literature on the impact of the environment on the firm. Innovation and external environment

management are resource driven. Both institution and resource dependence perspectives posit that organisational choice is limited by a variety of external pressures (Miles and Snow, 1984).

Bourgeois (1980) contended that strategic decision making is at the heart of the organization-environment co-alignment process so heavily emphasized in both the business policy (BP) and organization theory (OT) literature. Miles and Snow (1984) described fit as a process as well as a state, a dynamic search that seeks to align the organization with its environment and to arrange resources internally in support of that alignment. Bourgeois (1980) further alludes that this co-alignment delineates the activities through which organizational leaders establish the social or economic mission of the organization, define its domain(s) of action, and determine how it will navigate or compete within its chosen domains.

The Environment Strategy Performance (ESP) paradigm which is based on Bain and Mason's (1939) Structure Conduct Performance (SCP) paradigm postulates that organisations posture themselves appropriately through resource configuration to match environmental conditions. Enterprises do not respond to environments wholesomely. They scan the environment and respond to specific opportunities and threats (Porter, 1980; 1985) through either structural reconfiguration or other resource driven strategies. Lumpkin and Dess (1996) identified four key environmental characteristics or groups of characteristics in

their model: munificence, dynamism, complexity, and industry characteristics. The first three items, dynamism, munificence, and complexity, were identified by Dess and Beard (1984) as a refinement of Aldrich's (1979) six environmental dimensions.

Studies of environmental influence on strategy making have focused on environmental uncertainty as perceived by decision makers (Castrogiovanni, 1991; Miller and Friesen, 1982), the abundance of critical resources (munificence) (Pfeffer and Salancik, 1978). Environmental munificence refers to the extent to which critical resources exist in the environment. Thus, munificence may be described as the extent to which an environment can support a business and enable it to grow and prosper (Child & Kieser, 1981). The degree of resource abundance in the firm's environment (munificence) should have a significant impact on the firm's entrepreneurial orientation and subsequent growth. A more munificent environment accords the firm greater opportunity to acquire resources (Castrogiovanni, 1991). None of these studies has focused on how the environment and innovation mediate the resource-performance relationship.

The availability of capital has been found to be positively related to firm formation and growth (Castrogiovanni, 1991). Furthermore, the firm's range of strategic options is broader if resources are available (Romanelli, 1987). Given that favorable supply-demand tradeoffs exist under munificent conditions, it is easier to turn a substantial profit when munificence is

high than when it is low (Castrogiovanni, 1991). According to him, under munificent conditions, poorly managed businesses may be able to generate profits despite their own ineptitude reducing incentives for planning and efficiency while encouraging opportunistic behaviour. As the environment becomes more complex, firms seeking to gain competitive advantage over other firms in their environment should attempt to become more innovative and proactive. Firms should increase experimental behaviour to find novel answers where old ones no longer work (Brittain and Freeman, 1980).

Firm Performance Measurement

Performance is one of the most widely researched organisational outcomes. March and Sutton (1997) argue that performance is so common in management research that its structure and definition are rarely explicitly justified; instead, its appropriateness, in no matter what form, is unquestionably assumed. Chakravathy (1986) opines it is a multidimensional construct and thus any single index may not be able to provide a comprehensive understanding of the performance relationship relative to the construct of interest.

McCann (2004) views organization performance as relating to the efficiency and effectiveness of the firm. Studies focusing on organizational effectiveness are concerned with unique capabilities that firms develop to assure success. In the context of organizational financial performance, performance is a measure of the change of the financial state of an

organization, or the financial outcomes that results from management decisions and the execution of those decisions by members of the organization. Different measures of organizational performance have been used in management studies with little or no thoughtful discussion of why the measures used in the studies were chosen (Kaplan and Norton, 1992).

Some researchers have expressed dissatisfaction with exclusive use of financial data to measure performance because it encourages short term and local optimization thus overlooking the long term improvement strategy and ignoring competitor information (Kaplan and Norton, 1992). They suggest the use of multiple indicators while undertaking to understand stable relations over time. Financial measures of organizational performance include profit which is the difference between revenue and expenses over a period of time and has been defined by proponents of financial measurement as the ultimate output of the firm (Pandey, 1999). He suggests that two types of profitability ratios, Return on Investment and Earnings Before Interest and Tax can be computed using either sales or investments.

Liquidity measures a firm's cash and cash equivalents readily available to fund operations. According to Gill (1990), liquid funds consist of cash, short-term investments for which there is a ready market, short-term fixed deposits and trade debtors. The current ratio helps to measure a firm's liquidity (Pandey, 1999). Higgins (2001) contends that activity ratios such as

inventory turnover are used to assess the efficiency with which firms manage and utilize their assets. According to Pandey (1999) inventory turnover ratio reflects the rate at which the firm is turning its finished goods into sales. Cash flows are measures of financial performance as they will allow an analyst to examine a company's financial health and how the company is managing its operating, investment and financing cash flows (Papeleu, 2000).

Critics of financial indicators argue that they lead to promotion of short term thinking (Kaplan, 1983). Johnson and Kaplan (1987) propose an integrated model of performance measurement that focuses on continuous improvement. O'Regan and Ghobadian (2004) propose customer satisfaction and innovation as important performance dimensions. Customer satisfaction is as a result of another critical non-financial measure of performance, quality. A number of scholars have identified efficiency and time as key performance measures (Bockerstette & Shell, 1993; Krupka, 1992) arguing that time is a more important metric than cost and quality since it can be used to drive improvements in both cost and quality. Kaplan and Norton (1992, 1996) developed the balanced scorecard to enhance firm performance. Under the balanced score card approach, a firm's performance may be viewed in terms of the expected customer oriented results and can be measured by the level of customer satisfaction, loyalty, frequency of purchase and repurchase of a firm's products.

According to Kaplan and Norton (1996) a growing number of firms are replacing their financially-based performance measurement and compensation systems with a balanced scorecard incorporating multiple financial and nonfinancial indicators. Performance has over the years evolved to encompass wider definition and philosophies such as profit impact of market share (PIMS) and the sustainability scorecard. According to Buzzell (2002), PIMS was pioneered by marketing science institute and Sidney Schoeffler of General Electric. He contends that PIMS is undoubtedly best known for the finding that market share and profitability are positively related. Socially responsible investment (SRI) is at the pinnacle of the sustainability scorecard approach to performance measurement (Tsai et al., 2009). SRI is an investment process that considers social, environmental and ethical factors for making investment decision (Velde et al., 2005; Renneboog et al., 2008).

Both PIMS and the sustainable balanced score card include performance measurement metrics outside the organizations boundaries making them more complete frameworks of performance measurement.

Conceptual Framework

The conceptual model can be adopted to guide empirical research for answering the gaps highlighted in the review of conceptual and empirical literature. The model proposes that there is a direct relationship between resources and performance. It further proposes that firm resources affect innovation and this relationship is moderated by the external environment. The third proposal is that the relationship between resources and performance can be intervened by innovation and moderated by the external environment. This model is presented in Figure 1.

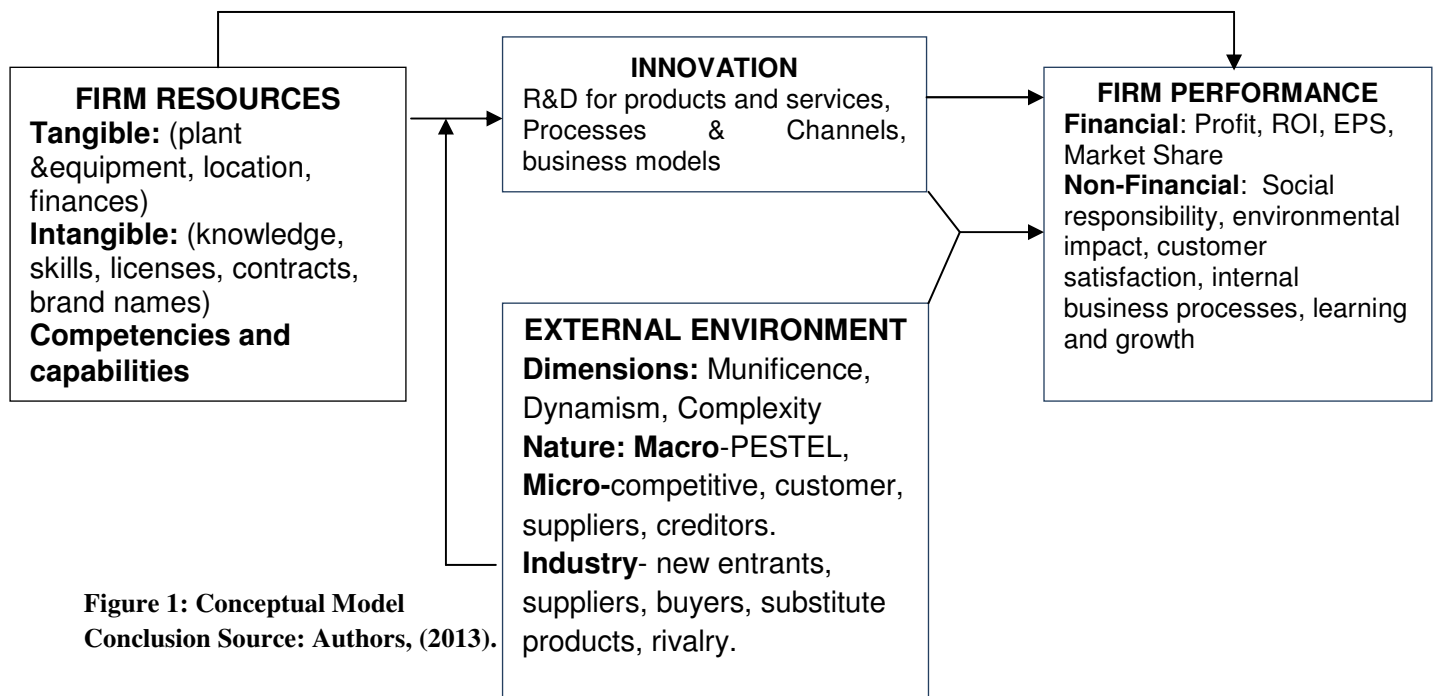


Figure 1: Conceptual Model
 Conclusion Source: Authors, (2013).

The review of literature in this paper has unearthed a number of research gaps. There is no consensus on the relationship between firm resources and performance. What has not been clearly articulated and supported is the role of innovation in such a relationship. There is also lack of a clear frame work for measuring innovation and identifying its outcomes.

Empirical research on the linkage between firm performance and product innovation reveal that innovation leads to organizational renewal. However, there is still neither consensus on the effects on performance nor a clear framework to support this relationship. It is apparent from the literature that there has been extensive research on environment and performance. However, the moderating effect of the environment on the resource-performance relationship has not been the main focus of researchers in the field of strategic management. The model developed hopes to fill the knowledge gap.

Implication of the Study

As much as research on organizational resources, innovation has undergone significant fermentation including research in the recent past, conceptualization of these concepts and their subsequent impact on firm performance is still rudimentary and incomplete. This paper proposes an integrated model of these variables to depict their likely influence on firm performance.

Lack of consensus on the influence of organizational resources on firm performance implies that some variables

could explain the lack of consensus but the empirical roles played by such variables are not known. The paper proposes that the relationship between organizational resources and performance is intervened by innovation and moderated by the external environment for a sustained competitive advantage.

In the paper, the conceptual and empirical works on resources, the environment, innovation and firm performance are highly fragmented blurring the picture of the drivers of firm performance. This implies that an opportunity exists to advance a conceptualization that would concretize the manifestations of the variables in question in order to explicitly depict the drivers of firm performance. This paper proposes a conceptual model which can be adopted to guide empirical research to address the gaps identified and described in this paper.

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