# The impact of IT-based Knowledge Management Systems on internal venturing and innovation: a Structural Equation Modeling approach to corporate performance



## Introduction

The competitive scenario is evolving fast. As pointed out by Prahalad (2012), all types of businesses are having to face new managerial difficulties due to several trends such as globalization, deregulation, technological convergence, disintermediation and less evident industry boundaries (Prahalad 2002). At the same time, the strategic position of incumbents may be put at risk by radical technological innovations (Abernathy and Utterback 1978, Christensen 1997, Henderson and Clark 1990, Tripsas and Gavetti 2000, Tushman and Anderson 1986, Utterback 1994). Innovations, both radical and technological, are progressively requiring that the firm develops new knowledge bases or that it recombines part of its established knowledge with newly developed knowledge streams (Freeman and Soete 1997). That is because innovations may render the established knowledge base of firms obsolete and diminish the market value of a company's existing business portfolio: in this case, they are likely to turn existing competencies into "core rigidities" (Leonard-Barton 1992 1995).

Furthermore, to ensure a sustainable profitable growth, businesses nowadays should be able to take advantage of the current knowledge base and, at the same time, consider the opportunity of expanding it (March 1991, Tushman and O'Reilly 1996). Consequently, when a firm carries out an initiative aimed at unveiling business opportunities based on new technologies, this always needs to be totally integrated within a corporate growth strategy. One of these opportunities relies on the possibility for the firm to stimulate internal corporate venturing. This consists in creating, within the company, autonomous units responsible for the development of innovative projects. These units are formed by employees who conceived the idea, or those who simply want to collaborate in this project, all animated by the common entrepreneurial spirit. The main objective is to ensure that employees who are more "enterprising" assume the role and status of internal entrepreneurs through empowerment of those involved and the granting of substantial autonomy in development planning, as well as incentives and fees, mainly due to the use of IT-based KMS. The internal venturing, then, is nothing but the result of the company's ability to stimulate the ideas and projects of its

employees, creating an environment that can stimulate entrepreneurship. These processes are based, in fact, on the exaltation of the latent entrepreneurial skills present in the company. However, the fundamental idea behind internal corporate venturing is "to exploit the complementarities of small firm capabilities to explore new opportunities and large firm capabilities to exploit existing competencies" (Quinn, 1985).

However, the exploitation of knowledge alone has been the main focus of knowledge management practices and literatures. This focus has been described by Von Krogh et al. (2001) as a "leveraging strategy". Most of the attention is directed toward the effective and efficient utilization of existing knowledge. It garnered success based on the idea that many enterprises had not used knowledge in full. This underutilization was essentially explained by a failure or shortage of knowledge sharing. The lack of knowledge sharing may result in inappropriate coordination and efforts to perform unnecessary activities (Bender and Fish 2000; Hoopes and Postrel 1999). Anyway, as pointed out by the relevant IS literature, when debating about knowledge management and its exploitation through sharing practices, there appears to be a significant contradiction between two views (Straub & Del Giudice, 2012). For an effective management of organizational practice, it is pivotal to comprehend how a localized work environment produces knowledge processes (Brown & Duguid, 1991; 1998; 2001a; 2001b; Nonaka & Konno, 1998). Knowledge related to specific work is embedded within the social and cultural rules of behavior regarding a community of professional practice, which is a particular group of people who perform a given job in a specific location (Alavi & Leidner, 2001; Lave & Wenger, 1991; Suchman, 1987, 1996; Bedford, 2012; Breu & Hemingway, 2002). However, for information technologies to be utilized successfully in order to exploit knowledge and transfer it among and across diversified workgroups, it is essential to carry out knowledge achievement, codification, and communication among workers who are engaged in activities that are related but diverse, placed in different locations and pertaining to different communities of practice (Leibowitz, 2001; Zack, 1999; 2003). Therefore, two kinds of analysis should be brought forward when it comes to discussing the exploitation of organizational knowledge for internal venturing and, thus, for innovation purposes. The first consists in engaging reflectively in those local systems of social interaction, practice, and sense making that form organizational work. The second consists in involving such separate analysis and sense making, which allows externalization, reification and explication of situated knowledge (Buckland, 1991; Gasson, 2005; Johnson et al., 2002; Nonaka & Konno, 1998; Weick et al., 2005).

Managers need information sets they can easily manage, and for this purpose, they normally rely on top-down information processing, creating cognitive knowledge structures that make their information field less complex (Walsh, 1995). These knowledge structures are diversified and may

consist of simple heuristics aiming at producing decision-making short cuts or simplification systems designed to codify a high number of information points into a manageable set of categories (McNamara, 2002; Schwenk, 1984).

The main problems arise when discussing the ways individual tasks involving interpersonal or computational communication may be supported by information systems. Thus, it is important to take account of the utilization of the technologies for remembering, reproducing or reconstituting knowledge, when starting to evaluate the role of information systems in intra-organizational settings for the mentioned purposes of intrapreneurism (Steinmueller, 2000).

For instance, integrated information systems include centralized data repositories, which are especially intended for the storage and coordination of all knowledge and activities that take part in defining, engineering, producing, manufacturing and maintaining an artifact throughout its whole lifecycle and across the extended organization. These repositories are designed to support the capacity of an organization to store and integrate distributed knowledge sources; they also aim at coordinating and synchronizing dispersed processes and actions across function, discipline and task-specific boundaries (D'Adderio, 2003).

This observation is fundamental, if organizations are to take advantage of the utilization of knowledge in order to improve organizational effectiveness. A substantial enabling factor is the creation of a knowledge-sharing organizational setting; this may be done by constructing a solid organizational knowledge infrastructure held up by knowledge networks and technologies (Galliers, 2002). An integrated interactive approach is needed, if organizational knowledge should be exploited, and to this end ICT may serve as effective facilitators. Since knowledge repositories depend on the re-user and the aim of knowledge re-use, the requirements of the externalization and diffusion of knowledge are diverse (Markus, 2001). Thus, the architectural requirements for the creation of repositories, which are basically a knowledge infrastructure, should only be considered as enabling factors in a wider setting of a knowledge-sharing culture. Here, it is emphasized that, although we knew from the managerial literature that management largely depends on the emergent advanced ICT, we still know very little about the relationship between an IT-based Knowledge Management System (KMS) and its impact on some aspects of the organizational behavior, like internal venturing, innovation capacity and company performance.

The starting point of the present research seemed to be that, regardless of the forms it takes, a performing IT-based KMS should rely on a synergistic integration of technological resources, entrepreneurial culture, and a consistent knowledge infrastructure (Galliers, 2002). In particular, the purpose of this study is to assess the perceived importance of information technology as a core factor enabling innovation in knowledge management (KM). To this effect, the authors propose an

approach for using the IT Tools for Knowledge Management involved in the design of effective learning applications to help the firms to guide internal venturing development.

## Theoretical Background

*Knowledge types and knowledge sharing*

With the aim of capturing and exploiting knowledge strategic purposes, both internal and external, enterprises have been inclined to adopt technologies finalized to the creation of an institutional memory for knowledge networks. With these systems, the concept of knowledge is tangibly conceptualized, since it unites the attributes of culture, history, human memory, and business process. As argued by Hatami et al. (2003), a major step in capturing knowledge assets may be driven by integrated systems. In fact, both face-to-face and virtual human interaction and participation may be given intense stimuli by emerging IT (Rolland et al., 2000). The majority of these solutions have been object-oriented ways to shape organization memory (Wang, 1999). Among these memory systems, social networks, knowledge centers, and several computer-based programs can be highlighted (Olivera, 2000). Differences between knowledge types (i.e. explicit and tacit), may make a difference to how the KMS is designed and what IT options are considered to support the KMS. Those who support tacit knowledge sharing mediated by IT claim that the latter can encourage knowledge sharing processes by sustaining a number of conversions of tacit-explicit knowledge, even if it may not be equivalent to personal interactions. According to Marwick (2001), the creation and transfer of tacit knowledge is being improved by the gradual progress in providing for the human dimension while developing tools such as expertise locators, synchronous collaboration systems, high bandwidth video-conferencing, and discussion forums. It is thanks to IT that individuals are able to freely explain their new ideas and perspectives on grounds made fertile by supporting tacit knowledge creation and sharing; they can carry out a constructive debate among experts; and also spread information, which can allow other people to reach new conclusions and open up to more enlightened interpretations (Alavi & Leidner, 2001).

Moreover, according to Lopez-Nicolas and Soto-Acosta (2010), all the knowledge creation processes described in the SECI model can be affected by IT. The scholars argue that the socialization of knowledge may be influenced by IT, since interactions among people are made easier. The impact of IT may be also seen on the externalization process through the development of online discussion forums and chat rooms; and on the combination process, because IT allows sorting out, adding, combining and categorizing available information. In the end, also the

internalization process may be affected by IT, since informal conversations and discussions are stimulated, and the information becomes more widespread. Despite the scarce evidence found about the direct impact of IT on the socialization and externalization processes, further in-depth analysis is suggested to understand how different kinds of IT interplay in relation to knowledge sharing. According to Sarkiunaite & Kriksciuniene (2005), who also employed the SECI model, if IT is intensely utilized, informal relationships among people are positively influenced; and this, on the other hand, stimulates job-related knowledge sharing.

There is no doubt that knowledge sharing, especially when the level of tacitness is low or medium, can be facilitated by the use of IT. In fact, the latter helps create a context where experts can identify one another and discuss job-related matters, since it offers better mechanisms for processing, delivery and exchange of their precious knowledge (Falconer, 2006; Marwick, 2001; Panahi et al. 2013). A number of different IT tools have then been proposed by researchers in order to make tacit knowledge sharing easier. These include communication tools (online forums and chat rooms, for instance), collaboration systems, tools that allow media sharing, video conferencing, social networks, wikis, and blogs, which are also known as Web 2.0 tools. Tacit knowledge may also be shared in other significant ways based on the use of IT; for example, demonstrating skills by utilizing video-clips, or generating technical argumentations and sharing practical daily experience by employing ICT (Lindvall et al. 2003; Panahi et al. 2013).

*KMS for Internal venturing, innovation and organizational performance*

As claimed by most of the relevant literature, KMS development in businesses is essentially based on IT and exploits ideas from IS development methodologies (Alavi & Leidner 2001; Anantatmula & Kanungo 2010; Tohidinia & Mosakhani 2010; Zack 1999; Zack 2003; Soto-Acosta et al. 2010a; Soto-Acosta et al. 2010b; Soto-Acosta et al. 2015; Meroño-Cerdan et al. 2015; Palacios-Marqués et al. 2015). Several scholars have observed that the degree of effectiveness of KMS depends on the levels of KM infrastructure (structure, technology) and KM process (acquisition, conversion, application, protection) capacity (Zhijin, & Zhengkai, 2006; Panahi et al. 2013). Others assert that the key KM processes, which consist of retrieving, sharing and developing knowledge, result in improved decision-making and organizational learning; these in turn generate better organizational performance considering quality, productivity and satisfaction (Trequattrini et al. 2015; Lombardi et al. 2014; Celenza et al. 2010). Even more significant for this study is the fundamental role of the different factors that function as enablers for the outcome of KM processes (Del Giudice et al. 2012; Del Giudice et al. 2014; Del Giudice et al. 2011; Del Giudice et al. 2013;

Del Giudice & Maggioni, 2014; Del Giudice & Straub 2011; Della Peruta, 2014; Della Peruta & Del Giudice, 2013). The literature regarding KMS composition and its practical development points out that scholars who deal with the subject normally consider KMS as a class of IS, and when they conceive system solutions for the application of KM in businesses, they focus on IT (Alavi & Leidner 2001). Since the KMS design was supported by IT solutions, contextual representation of knowledge flows and knowledge interfaces followed. Likewise, depending on knowledge use or reuse, there were also changes in knowledge value, purpose, and nature. Furthermore, these representations varied in relation to the evolving situations. Conclusions arising from investigating IT options to support the KMS disclosed issues related to the difficulties of locating precisely knowledge from organizational users, and of effective communication and interaction. Several authors share these ideas; in particular Boland & Tenkasi (1995), who state that the production of knowledge to generate innovative products and processes in knowledge organizations is based on the capacity of having solid perspectives within a community, together with the capacity of taking into consideration the perspective of others. KMS based on IT should utilize IT methods and techniques that allow users to interact with one another through structures and support that they themselves provide; simultaneously, storage and processing of information must be ensured effectively. Thus, more or less, there appear to be two specifications of IT systems included in a KM process:

a) make collaboration among users involved in the process easier;
b) create a strong structure, adequate for the administration of the information that is the base of the "knowledge" to manage.

The management of collaborative "knowledge" attributes special relevance to users and their profiles, and, in terms of cooperative work, to the members of the communities; especially utilizing a number of tools or systems that allow a group of users to interact in a common space, where they can share existing knowledge and build new knowledge collaboratively.

Support is provided by these systems in terms of communication tools, such as chat rooms and online forums, and others that allow to share content, from files to links, and perform activities together, from multi-user drawing and editing to web surfing and calendar groups. If the systems addressed to collaborative learning are taken into account, the attention is directed toward a process described by Jonassen et al. (1992) as "social construction of knowledge", which describes an activity performed by a social community of apprentices who acquire and share new knowledge. Thus, when analyzing IT options to support the KMS, solutions should be found giving space to customized and evolving viewpoints of knowledge agents, allowing them to give account

of their networks according to their own perspectives, and making it also possible to modify the representation of knowledge agents, flows and interfaces depending on the evolving situations.

Boland & Tenkasi (1995) believe that perspective taking is based on "valuing diversity of knowledge by enabling each type of expertise to make unique representations of their understandings, and assisting actors with different expertise to better recognize and accept the different ways of knowing of others." According to the authors, perspective taking can be stimulated by communication systems that stress the importance of supporting the specific needs of separate communities of knowing. The discussion is based on the idea that individual and collaborative knowledge construction is made easier by IT-mediated learning activities within an organizational environment; IT-based KM practices implicitly include a twofold idea of knowledge; on the one hand, it is viewed as process and activity, which means utilization, assessment, modification and reuse of material; on the other hand, from the product side, it is considered a distributed attribute of an entire system. When a vast amount of new IT applications is developed, adopted and implemented, there is the definite expectation that there will be an increase in the access of employees to relevant information required to encourage concretely the processes of creation of new businesses. The purpose of structuring and organizing these practices is to: 1) take advantage of shared space and equipment in order to arrange cultural, recreational and interdisciplinary activities; 2) encourage the exchange of ideas, and the development of relationships and contacts; 3) establish an intrapreneurial climate for internal venturing, which can have an intense effect on legitimizing a business start-up; 4) motivate managers to propend more toward strategic innovation development. An innovative corporate culture is encouraged by implementing new IT tools for KM; also, by analyzing the alternatives for organizational performance, organizational learning becomes stimulating.

This approach leads to the conclusion that IT may create a set of opportunities and advantages that can stimulate learning attitude and affect all the factors involved in the process of creation of an internal venturing climate, as well as support the innovation process within the company. The above-mentioned advantages may take the form of activities of creation, acquisition, sedimentation, use and application of knowledge to business processes, and can be decisive in merging a good idea or technology, and a profitable business.

For the correct application of different technologies to be used for better connecting KMS with internal venturing and innovation purposes, it is pivotal to comprehend their potential. However, the components and organizational consequences of knowledge management reveal that the latter may not be considered the only aim of technology for knowledge sharing; in fact, above all, the implementation of the underlying innovative processes should be made easier. Today, a

crucial organizational capacity has become leveraging knowledge in an effective manner. One of the main problems for the majority of organizations nowadays is the best way to capture, share, retain, and reuse the knowledge already present within the business. Nevertheless, in the present era of knowledge sharing and of open innovation, senior managers responsible for technological innovation are increasingly involved in leading internal venturing initiatives that reach beyond the boundaries of the organization. These initiatives just include investing in IT-based KMS because, as noticed above, the creation of a favorable ambient to innovation and to the sharing of competencies within the company, will consequently push human resources to express their own entrepreneurial potential.



## Research design

As discussed, in the literature it is still scarcely investigated the issue of the effects of a more widespread use of -based KMS on variables such as the internal venturing, the propensity to innovation and business performance. The research design at the base of the present research has provided a survey which was conducted on a sample consisting of 187 different companies located in the Italian provinces of Naples and Caserta, from the segments of the electronics, the computer and network systems, the SW development, aimed at deepening connections and influences of the use of IT-based KMS on phenomena such as those described above.

### *Methodology*

The survey, conducted using CATI technique (Computer Aided Telephone Interview), included the distribution of a questionnaire divided into 15 questions. In order to carry out the research, 815 companies were upstream selected, because considered representative of the universe of reference. The Chambers of Commerce of local courts did provide their contact details, as well as their balance sheet data of the last three years. Those data were used in order to assess the companies' business performances. Of the total sample, 104 companies have been not reached on time, 71 did return incomplete questionnaires, 97 expressed not to be interested in the research, 214 have not provided any response, while 142 were discarded because unsuitable as they have stated, at the opening question, to not use IT-based KMS (or that they did use, but for less than three years). The answering rate, net of the companies identified as "unsuitable", was 27.8%.

Subsequently to the sampling phase, in order to define the measuring instrument, we performed and adjusted items and scales derived from former studies in the literature (Del Giudice

& Straub, 2011; Del Giudice et al., 2013) as well as we searched for new ones (like the propensity to intrapreneurship). Standard procedures for the definition of the items and, accordingly, for the identification of the scales were developed, following the guidelines suggested by Churchill (1979) and Gerbing and Anderson (1988). The definition of the new observed variables used at the same time different techniques, such as in-depth interviews with entrepreneurs and business managers, and bibliographic recognition (Glaser and Strauss 1967; Eisenhardt 1989). At this stage, therefore, the surveying work consisted in performing a series of in depth interviews to top managers of 7 companies operating in the IT and TLC fields in the Italian Provinces of Naples and Caserta. When this 'convenience' sample was established, the following rules were taken into account (Bardin 1977):

a) the rule of representativeness, which consists in ensuring that the corpus is representative of the different perceptions of the respondents;
b) the rule of exhaustiveness, which consists in taking into account all the elements that are part of the corpus;
c) the rule of homogeneity of the documents submitted to verification analysis. Preference for the in-depth interview technique, which is widely used in economics and business management research (Evrard et al. 1993), is justified by the fact that it allows respondents to freely express their opinions within a group of topics defined by the researcher (Bailey 1994).

The basic themes used at that stage of identification of possible items were:

- the availability of IT-based knowledge management integrated systems;
- the diffusion of knowledge sharing procedure within the firm;
- the management propensity to the innovation;
- the processes of internal venturing ("intrapreneurship");
- the evaluation of the company's performance.

*Variables and research hypotheses*

The collected interviews were subjected to an initial series of 'floating' readings, characterized by the absence of assumptions regarding the presence of specific elements contained therein and the attempt to obtain a first general overview of the topic. The in-depth interviews conducted enabled the generation of an initial group of items related to various constructs, which are of interest for the construction of the measuring instrument and whose "signaling ability" has been subsequently confirmed by the emerging latent variables. By the way, the exploratory factor analysis, whose complete grill is available, returned the following latent variables and their reliability coefficients:

KMIT (expressive of the availability of an IT-based knowledge management system, Cronbach a = .78)

KSP (expressive of the diffusion of knowledge sharing procedures within the firm, Cronbach a = .72)

PINN (expressive of the management propensity to the innovation, Cronbach a = .81)

IVENT (expressive of the management propensity to the internal venturing, Cronbach a = .75)

EPER (expressive of a positive evaluation of the company performance, Cronbach a = .77)

Then the main research hypotheses have been formalized and explained as follows:

**H1** => *KMIT is positively associated with KSP*

**H2** => *KMIT is positively associated with EPER*

**H3** => *KMIT is positively associated with IVENT*

**H4** => *KSP is positively associated with PINN*

**H5** => *KSP is positively associated with EPER*

**H6** => *IVENT is positively associated with PINN*

The hypotheses were tested with the support of multivariate statistical analysis techniques (in the reported analyses, both IBM SPSS software version 23.0.0 and LISREL 9.2 were used). The

analysis of Cronbach's alpha revealed an overall satisfactory levels of consistency: the estimate of the consistency of all the scales selected on completion of the exploratory factor analysis complied with a cut-off point loading >0.70 (Nunnally and Bernstein 1994).

*Confirmatory analysis: Structural Equation Modeling*

The confirmatory analysis has been performed by using the Structural Equation Modeling (SEM) technique. We distinguished variables in exogenous (KMIT) and endogenous (KSP, EPER, IVENT, PINN). The structural equations confirmed the positive influence of the adoption of IT-based KMS on variables like knowledge sharing, internal venturing and, more generally, on corporate performances. Furthermore, they have highlighted the positive impact of knowledge sharing on management propensity to innovation and on corporate performances. As well as they confirmed a positive impact of the internal venturing latent variable on management propensity to innovation latent variable (Fig. 1).



*FIG. 1 ABOUT HERE*

**Discussion**

From the empirical analysis performed in this work, the following fundamentals emerged as being in line with main research objective. First of all, it recognized the value of information technology as a main factor that enables innovation in knowledge management (KM). Subsequently, however, it emerged awareness of the ability of IT tools for knowledge management involved in the design of effective learning applications to help enterprises to guide internal venturing development. In other words, according to companies surveyed, the opportunity to experiment interoperable, easy to use, engaging, and accessible IT applications allows for conveying the right information needed to reconfigure innovative mechanisms for entrepreneurism

and organizational performance.The study helps to understand how the ultimate goal of a knowledge management system is not only store information, but also the satisfaction of various needs of its users. Consistent with what has been observed in previous studies (Del Giudice & Straub, 2011), the empirical analysis developed has confirmed that 72% of companies surveyed has defined themselves much agree on the ability of KMS for supporting complex phenomena such as internal venturing: both encouraging the individual to become "intrapreneur"; and helping the employee to improve their performances within business processes in which they are likely to be involved. Finally, increasing both the organizational flexibility and the company's competitiveness, by helping to redesign internal processes more consistently with market expectations. The present study showed as a result that 74% of companies surveyed agreed that the IT-based KMS are likely to improve the communication systems in several ways (e.g. improving relationships with customers and suppliers, increasing sharing information and resources, facilitating the exchange of information and sharing of strategies, helping them to learn from mistakes). The same percentage of respondents understood this as the logical consequence of the development of projects for internal venturing. Furthermore, the correlation values between the KSP latent variable, expressive of the development of (IT-based) procedures for knowledge sharing, and the company's focus on innovation supports the need that it should be developed in way similar to the one developed in a framework not unlike the one in which open innovations are developed (Del Giudice et al. 20013). The following analytical discussion of the assumptions is supported by generally satisfactory values of the monitoring indicators of the structural equation modeling.

**Hp 1** => *KMIT is positively associated with KSP*

The positive impact of the KMIT variable on the KSP variable was registered by a value of the structural regression coefficient g = 0.63, compatibly with a *measurement error* (KSP) variable in a range of $0.11 < e < 0.31$ ($c^2 = 26.15$, df = 186, P<.05; GFI=0.81; AGFI=0.93).

**Hp 2** => *KMIT is positively associated with EPER*

The positive impact of the KMIT variable on the EPER variable was registered by a value of the structural regression coefficient g = 0.74, compatibly with a *measurement error* (EPER) variable in a range of $0.07 < e < 0.34$ ($c^2 = 29.80$, df = 186, P<.05; GFI=0.83; AGFI=0.90).

**Hp 3** => *KMIT is positively associated with IVENT*

The positive impact of the KMIT variable on the IVENT variable was registered by a value of the structural regression coefficient g = 0.65, compatibly with a *measurement error* (IVENT) variable in a range of $0.09 < e < 0.32$ ($c^2 = 34.12$, df = 186, P<.05; GFI=0.75; AGFI=0.82).

**Hp 4** => *KSP is positively associated with PINN*

The positive impact of the ITCF variable on the EP variable was registered by a value of the structural regression coefficient b = 0.73, compatibly with a *measurement error* (PINN) variable in a range of $0.08 < e < 0.22$ ($c^2 = 30.57$, df = 186, P<.05; GFI=0.73; AGFI=0.87).

**Hp 5** => *KSP is positively associated with EPER*

The positive impact of the ITCF variable on the EP variable was registered by a value of the structural regression coefficient b = 0.61, compatibly with a *measurement error* (EPER) variable in a range of $0.07 < e < 0.34$ ($c^2 = 28.43$, df = 186, P<.05; GFI=0.79; AGFI=0.83).

**Hp 6** => *IVENT is positively associated with PINN*

The positive impact of the ITCF variable on the EP variable was registered by a value of the structural regression coefficient b = 0.72, compatibly with a *measurement error* (EPER) variable in a range of $0.08 < e < 0.22$ ($c^2 = 27.12$, df = 186, P<.05; GFI=0.72; AGFI=0.81).

**Conclusion**

The research has shown that the tools of an IT-based KMS should allow, firstly, to simplify the work of cooperation for the production of a common knowledge set, as happens in the case of shared spaces, of recommendation systems and of tools dedicated to collaborative learning. Secondly, they should help generating formalized structures for the knowledge re-use, as occurs, for example, in the case of the information mediators, the digital libraries and the ontology based systems. The first type of systems reinforce the correlation emerged in the empirical analysis between the availability of an IT-based KMS and the development of formalized procedures for sharing knowledge. The second type, however, does emerge in the correlation between these systems and the development of innovation projects and in the support to the internal corporate venturing. However, the empirical analysis has shown that mainly tools, which are likely to

integrate the collective knowledge collective in a common shared area (e.g. a repository or an organizational memory), may arise from the connection between knowledge management and IT. These tools must substantially meet two needs, the first one being to reflect the intrinsic structure of knowledge assets within the firm. The second one, instead, is to organize knowledge according to people who will use it and how do these people share it with each other. Of course IT support should enable users to locate the knowledge required, informing users about what is the unit of knowledge most suitable for each topic or category. Generally KMS have a number of groupware services that allow users to work in groups (e.g. discussion forums, messaging, online discussion or conference, planning, additional tools for the delivery of reports or measurements on the system). Although regardless of what paths of development such systems favor, the study has in any case demonstrated a positive impact on the overall business performance. However, as immediate practical implication, any knowledge management system should have utilities that allow for collaborative work between users involved in the management of "knowledge", and facilitate the establishment of a functional structure for this "knowledge". Anyway, the present research conducted still shows some limits: the first one lies in the selection of the sample and in the choice of the method of confirmatory analysis. Future research could, therefore, focus on geographically assorted samples as well as on a wider use of confirmatory models alternative to the structural equation modeling or, finally, to search for control or mediating variables. Moreover, future studies may be usefully compare KMS merely based on procedures tacit and not formalized procedures with pure IT-based KMS, in order to understand the limits and benefits of the systems chosen. Still, a more detailed and in-depth focused on the business performance could be of sure interest for management scholars. Finally, it might be helpful to understand, in relationships based on the agency theory, the degree to which such integrated systems allow overcoming the many information asymmetries between the principal and the agent, and with what effects on management.



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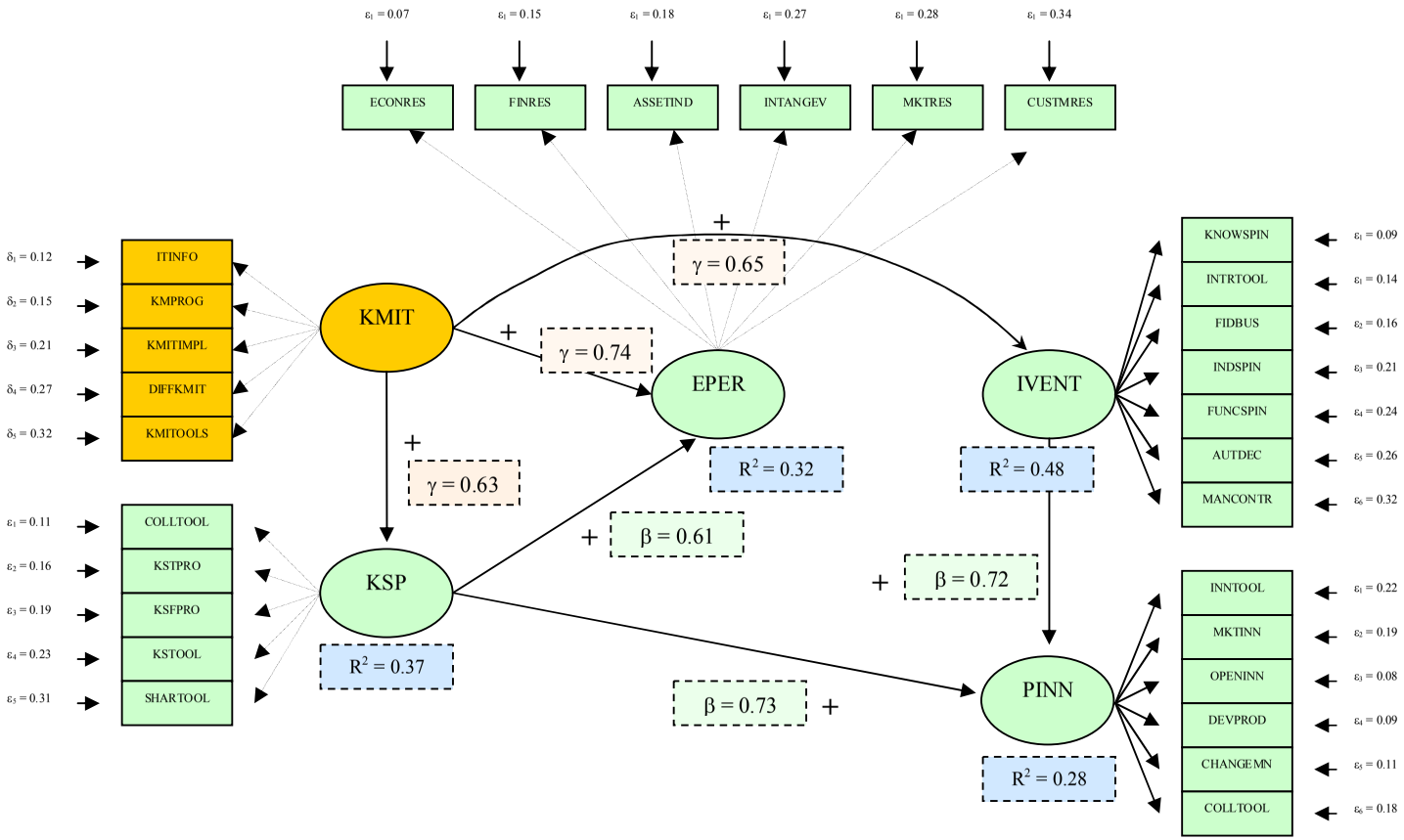


**NOTES**

***Exogenous variables (ξ)***

KMIT = KM Availability

***Endogenous variables (η)***

KSP = Knowledge sharing procedures implemented ($R^2$ = .37)
EPER = Positive evaluation of company performance ($R^2$ = .32)
IVENT = Management propensity to internal venturing ($R^2$ = 0.48)
PINN = Management propensity to innovation ($R^2$ = 0.28)

*Continuous line = significant paths*

Tab. 1. Structural Equation Model of the relationship between the availability of an IT-based KM system and the endogenous variables