

# A CONCEPTUAL FRAMEWORK FOR MEASURING ORGANISATIONAL PERFORMANCE THROUGH KNOWLEDGE MANAGEMENTS' SECI MODEL: A MEDIATING ROLE OF INNOVATION

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**Abstract** Organizational Performance is the predominant dependent variable of any firm. It allows managers and researchers to evaluate firm's activities and also compare its results with competitors. To gain the competitive edge, business organizations have to find out different types of resources/assets, viz., tangible and intangible (Hunt & Davis, 2008). Organizations also have to manage such assets efficiently and effectively to achieve superiority in the marketplace (ibid). Presently, many firms give more empathize to their intangible assets like 'knowledge' (Ali & Ahmad, 2006; Lirios et al., 2018). Consequently, organisations have to recognize innovation and manage such knowledge in systematic manner (Cardinal, 2001; De Silva et al., 2018). The purpose of this research was to examine the relationship between knowledge management and innovation (Product and Process Innovation) and its impact on organizational performance and also provide an integrated model of Knowledge Management – Innovation - Organizational Performance. The research reported here was to conduct a quantitative survey to build a broader set of evidence of the use of the SECI model in Indian banking Industry and its impact on the organizational performance. Under this research, a new survey was conducted with 292 'Probationary Officers' working in 90 branches of 'Jammu & Kashmir Bank Ltd' located in Jammu district (tested using factor analysis and Structural equation modelling) and successfully prove the connection between the knowledge management practices and performance of the bank. This paper found that innovation partially mediates knowledge management and organizational performance.

**Keywords:** Knowledge, Knowledge Management, Innovation, Organizational Performance, SECI Model

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## INTRODUCTION

During last decennium, Knowledge Management (KM) emerges as a 'practical business discipline' (Easa, 2012; Tryon, 2016). Its initial development was the result of different published work of management theorists and practitioners such as Peter Drucker in the 1970s, Karl-Erik Sveiby in the late 1980s, and Nonaka and Takeuchi in the 1990s (Uriarte, 2008). Nowadays, 'knowledge' has become a fundamental asset for organizations (Obeidat et al., 2016). In view of this, a large number of firms give more empathize to their intangible assets (Ali & Ahmad, 2006; Lirios et al., 2018). Accordingly, organizations focus upon managing this type of asset/knowledge through organizing, creating, sharing tacit and explicit knowledge and acquisition of such knowledge among the organisation, consequently enhances

innovation (Wang & Wang, 2012; Honarpour et al., 2018). Applying new knowledge is directly related to innovation (Huang & Li, 2009; Honarpour et al., 2018).

In today's turbulent environment, every organization's endeavour is to survive as well as to sustain its existence by improving performance (Shih & Putri, 2018). To meet the requirements of highly competitive markets, organizations must regularly improve their performance (Arslan & Staub, 2013). Recently, various researchers contribute to the literature of management of intangible assets to find out if it would increase organizational performance as well as to create value for an organization (Carmeli & Tishler, 2004; Leong, 2018). The significance of such intangible assets (like knowledge) is not only related with knowledge-intensive industries but also plays a vital role for all sectors of the economy (Teng & Song, 2011). Furthermore, because

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of dynamic nature and increasing significance of the banking industry in the worldwide economy, it become indispensable for banks to concentrate on capturing appropriate information into organizational knowledge (Kridan & Goulding, 2006; Alrawi & Elkhatib, 2009; Cebi et al., 2010). Knowledge Management works as an imperative tool that supports the creation of quality knowledge in the banking sector (Mizintseva & Gerbina, 2009).

Nonaka and Takeuchi (1995) proposed SECI Model which is the best embrace the nature of knowledge management and also of knowledge conversion. This model uses four processes of knowledge conversion: socialisation, externalisation, combination and internalisation to create knowledge in organizations. However, pertinent literature review recommends that of Indian banking industry is experiencing an absence of the application of SECI model, despite the fact that, this is a knowledge-intensive industry. Therefore, the purpose for the research reported here was to conduct a quantitative survey to build a broader set of evidence of the use of the SECI model in Indian banking Industry and its impact on the organizational performance through innovation. Further, examination of these relationships can provide a deeper understanding of the concepts.

## LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

The literature review starts with explaining the concept of 'Knowledge Management', 'Innovation' and 'Organizational Performance' and further it covers the SECI model of knowledge management proposed by Nonaka and Takeuchi (1995). This section also mentions extensive literature on relationships between these constructs (See Fig. 1 for proposed research framework).

### Concept of Knowledge Management

Knowledge has been recognized as an imperative instrument for any firm to attain sustainable competitive advantage (Drucker, 1993; Wiig, 1997; Valmohammadi & Ahmadi, 2015; Obeidat et al., 2016; Santoro et al., 2017; Hislop et al., 2018). Knowledge may be defined as facts, skills, and understanding that an individual can obtain by learning and experience. It improves the capability of an individual to evaluate context, make decisions, and taking actions (Awad & Ghaziri, 2004; Tserng & Lin, 2004; Meihami & Meihami, 2014). Nonaka and Takeuchi (1995) define knowledge as "Information anchored in the beliefs and commitment of its holder." According to Newell (2015), knowledge management is broadly related with knowledge process and knowledge work in despite of only managing knowledge. It

is concerned with the growth and advancement of knowledge resources/ intellectual assets within the organization to attain organizational objectives (Hislop et al., 2018). Intellectual assets consist of both tacit knowledge and explicit knowledge (ibid). Tacit knowledge is identified as individuals inner or core knowledge that resides in their minds, which can be attained by face-to-face meetings, teleconferencing and electronic discussions (Duffy 2000; Rowley, 2003; Holste & Fields, 2010; Chuang et al., 2016; Moreno et al., 2018). Nonaka and Takeuchi (1995) recommended that tacit knowledge can be transmitted with the help socialisation process. On other hand, explicit knowledge is that knowledge which can easily be expressed in words, facts, figures, symbols and codes. Such knowledge generally recorded in organization's database and websites (Tiwana, 2002; Park et al., 2015; Moreno et al., 2018). Nonaka and Takeuchi (1995) recommended that explicit knowledge can be managed with the help combination process.

### Nonaka's Model of Knowledge Conversion (SECI Model)

Nonaka and Takeuchi (1995) proposed a 'SECI model' of knowledge conversion (socialisation, externalisation, combination, and internalisation) to explain the link between explicit and tacit knowledge. This model explains, 'How knowledge is created and can be converted' (ibid). Nonaka categorized four modes of SECI model as follows:

- Converting tacit knowledge into tacit as '*Socialisation*' ,
- Converting tacit knowledge into explicit '*Externalisation*' ,
- Converting explicit knowledge into explicit as '*Combination*' ,
- Converting explicit knowledge into tacit as '*Internalisation*' (Nonaka, 1994).

Under '*Socialisation*' process, existing tacit knowledge is converting into new tacit knowledge by sharing experiences which are learned from organizational regular activities through social interaction as well as cultural processes (Nonaka & Takeuchi, 1995; Nold, 2009; Ismail & Ahmad, 2012; Chatzoudes et al., 2015; Siadat, 2018). According to Nonaka and Takeuchi (1995), '*Externalisation*' process is to convert tacit knowledge into explicit knowledge and such knowledge, "take the shape of metaphors, analogies, concepts, hypotheses or models". Nonaka and Takeuchi (1995) considered that the process of converting existing explicit knowledge into new organised and systematic set of knowledge is known as '*Combination*' process. According to Nonaka and Takeuchi, 1995, '*Internalisation*' is closely related to "*learning by doing*" and/or "*organizational learning*". It is a process of recycling the explicit knowledge and sharing it throughout the organization by converting it

into tacit knowledge (Nold, 2009; Ismail & Ahmad, 2012; Chatzoudes et al., 2015; Siadat, 2018). These four practice of Nonaka and Takeuchi (1995) SECI model gives an idea about that knowledge can be transferred from one person to another and from the experts to databases by knowledge conversion; as a result knowledge remains in the organization (See Figure-2, SECI model given by Nonaka and Takeuchi, 1995).

### Concept of Innovation

Presently, organizations have been striving hard to find different ways for achieving sustainable competitive advantage in the market. Accordingly, 'Innovation' is considered as an essential pre-condition to take advantage over the competitors (Drucker, 1985; Kafetzopoulos et al., 2015). Researchers defined 'Innovation' as "an idea, practice, or object that is perceived as new by an individual or other unit of adoption" (Rogers, 2003; Grawe, 2009; Daugherty et al., 2011; Zawawi et al., 2016). According to Tidd et al. (2005), 'Innovation' is a process of converting an opportunity into innovative ideas and facilitates improvement in organizational processes, products and services. In fact, researchers widely agreed that Innovations can be categorized into many contrasting forms like technical-administrative; radical-increment and product-process innovation (Utterback, 1994; Gopalakrishnan & Damanpour, 1997; Cooper, 1998; Eris & Saatcioglu, 2006). '*Technological innovation*' related to adoption of innovative technology within an organization that influences organizational output processes. On other hand, '*Administrative innovation*' needs to change the policies, allocation of resources, and other factors related to the social structure of the organization (Draft, 1978; Betz, 1993; Gopalakrishnan & Damanpour, 1997; Cooper, 1998). Incremental and radical innovations are related with 'degree of change associated with it'. '*Incremental innovation*' needs to nominally improve and extend basic technology within organization that fundamentally strengthens the current capacities of an organization. On the other part, '*Radical innovations*' make indispensable changes in organization activities and signify obvious blows up of an existing business model (Darroch, 2005; Hall & Andriani, 2002; Gopalakrishnan & Damanpour, 1997). '*Product innovation*' can be defined as transformation in the end product or service offered by an organization. Such innovation helps to build an external market and also satisfy the needs of customers (Utterback & Abernathy, 1975; Ettlé & Reza, 1992; Utterback, 1994; Cooper, 1998; Gunday et al. 2011; De Vries et al., 2016). In contrast, '*Process innovation*' represents changes in techniques, methods, equipment and/or software in the manufacturing or delivery process of an organization (Utterback, 1996; Cooper, 1998; Tidd et al., 2005; Ke-xin et al., 2006; Tan & Nasurdin, 2010; Gunday et al. 2011; De Vries et al., 2016). According to Walker (2014),

Process Innovation is related to Improvement in the quality and efficiency of internal and external processes of the organization. According to Damanpour and Gopalakrishnan (2001), different types of innovations (radical, incremental, technological and administrative innovation) are considered to be linked with a product or process. The present paper focused only on product and process categories of innovation which are highly incorporated and mostly found in manufacturing and service industries (ibid).

### Concept of Organisational Performance

Organizational Performance is the predominant dependent variable of any firm. It allows managers and researchers to evaluate firm's activities and also compare its results with competitors. In pertinent literature, organizational performance is considered as the end result of action (attain performance) or an event (outcome) or both (Alrubaiee, 2012; Alrubaiee et al., 2015). Organizational performance is represented by firm's ability to fulfil its goals and objectives with the use of available means in an effective and efficient manner (Daft, 2000; Zaied et al., 2015; Ha & Lo, 2018). Cameron (1986) and Redshaw (2001) suggested organisational performance as well-defined multi-dimensionally by providing four distinguish categories: satisfying customers, achieving organizational goals, improving internal processes, and increasing resourcefulness. Kaplan and Norton (2005) also suggested four perspectives of organisational performance: customer, internal business, innovation & learning and financial. As per the views of Waggoner et al. (1999) organizational performance helpful in various activities of an organization such as performance monitoring, getting better communications, enhancing motivation, finding out the areas that need concentration and strengthening accountability. Slavković and Babić (2013) also measured organizational performance on the basis of ten major factors viz., capable of reducing costs, growth / stability of income, employees productivity, profitability level, product / services Quality, new Product / services development, satisfaction of customer / clients, response to technological and market changes, solve new problem, good reputation.

### Relationship between Knowledge Management and Organizational Performance

In recent literature of management, academicians and practitioner found that intangible assets create value for business firms (Lev & Daum, 2004; Edvardsson & Oskarsson, 2011) and also enhance organizational performance (Haji & Ghazali, 2018; Bhatia & Aggarwal, 2018). Multitudinous studies have investigated the link

between knowledge management and organizational performance from different perspectives (Choi & Lee, 2003; Birasnav, 2014; Koohang et al., 2017; Manfredi Latilla et al., 2018). Knowledge process capabilities and knowledge infrastructure capabilities also affect organizational performance (Gold et al., 2001). Further, Researchers have also investigated that ‘how knowledge management initiative affects firm’s performance’ (Firestone, 2001; Robinson et al., 2001)? They have also examined, ‘How it can be measured by with the help of Comprehensive Benefit Estimation (CBE)?’ Researchers have view that adoption of knowledge management practices within the business organization can enhance its capability to give high-level performance (Yang, 2007; Valmohammadi & Ahmadi, 2015; Inkinen, 2016). Some of the empirical studies investigate that knowledge management’s Critical Success Factors (CSFs) have a positive association with organizational performance (Gold et al., 2001; Inkinen, 2016). Additional, Chong et al. (2000) and Armistead (1999) have figured out the causal relationship among knowledge management implementation and business performance. Furthermore, different researcher found that knowledge management has a significant association with organizational performance by taking into consideration some other constructs also like innovation, managing talent practices, organisational learning, knowledge transfer, leadership, trust (Birasnav, 2014; Byukusenge et al., 2016; Koohang et al., 2017; Byukusenge & Munene, 2017; Manfredi Latilla, et al., 2018; Keat & Lin, 2018). In addition, numerous studies suggested that tacit knowledge management has impact on performance of organizations via enhancing employee’s performance and organizational capabilities (Choi & Lee, 2003; Hoe, 2006; Karim et al., 2012; Muthuveloo et al., 2017). Therefore, this paper hypothesizes that:

*Hypothesis-1 (H<sub>1</sub>): Knowledge Management significantly impacts Organizational Performance.*

### **Relationship between Innovation and Organizational Performance**

In context of business organization, innovation act as a tool to enhance firm’s performance in several perspectives. Numerous researchers have view that there is a link between innovation-performance, which ensure improvement in corporate performance due to high innovativeness (Marchington & Wilkinson, 2002; Lin et al., 2013; Atalay et al., 2013; Uz Kurt et al., 2013; Camisón & Villar-López, 2014; Bolaji Bello & Adeoye, 2018). Additionally, some of researchers have also investigated direct as well as positive association of innovation types and organizational performance. Therefore, they stated that whenever innovation is utilized, it always leads to increased profitability (Aragón-Correa et al., 2007; Atalay et al., 2013). Furthermore,

researchers like Atalay et al. (2013) and Jayaram et al. (2014) have mentioned that technological innovation (product and process innovation) associates a positive and considerable link with organizational performance. In the literature, product and process innovation are the two majorly investigated types of innovation. The studies focused only on process innovation includes Olson and Schwab (2000), Baer and Frese (2003), Hervás-Oliver, et al. (2014), McElheran (2015), Dooley and Som (2018), Soetevent and Bružikas (2018) whereas studies of product innovation are examined by Li and Atuagene-Gima (2001), Visnjic et al. (2016), Zaefarian et al. (2017), García-Cruz, et al. (2018). Few comprehensive studies also examined the impact of product and process innovations on organizational performance and results show that particular product enhancement is positively related with firm expansion (Wolff & Pett, 2006; Walker, 2004). Therefore, this paper hypothesizes that:

*Hypothesis-2 (H<sub>2</sub>) Innovation has a significant impact on Organizational Performance.*

### **Relationship between Knowledge Management and Innovation**

Fundamentally, innovation ameliorates products and services through acquiring, sharing and assimilating knowledge with the aim of creating new knowledge (Obeidat et al., 2016; Sadeghi & Rad, 2018). The association between knowledge management and innovation has been explored by researchers and practitioners in the both ways theoretically as well as practically. Many researches support the relationship between KM and innovation (Darroch & McNaughton, 2002; Dougherty et al., 2002; Smith et al., 2001; Kamasak & Bulutlar, 2010; Kör & Maden, 2013; Saini, 2015; Obeidat et al., 2016; Sadeghi & Rad, 2018; Honarpour et al., 2018). According to Dougherty et al., (2002), innovation facilitates new solutions for organizational problems and mainly depends upon creation of new knowledge. Accordingly, as literature shows a strong association among KM practices and innovation strategies which enhance firm’s performance through proper flow of information within the organization (Saini, 2015). Acquiring knowledge is tremendously dependent on the accessibility of internal as well as external sources of knowledge which leads to knowledge modification within the organisation (Chen & Huang, 2009; Honarpour et al., 2018). Consequently, such processes enhance innovation outcomes (Chen & Huang, 2009; Honarpour et al., 2018). Knowledge sharing is also one of the principal KM components that effect the innovation in the organization (Grant, 1996; Day, 1994). In addition Lin (2007) argued that innovation capabilities enhancement depends upon willingness of employees to share knowledge. Researchers like Jantunen (2005) and Donate and de Pablo (2015) stated that a positive knowledge sharing culture helps

to enhance innovation capability within the organization. Therefore, this paper hypothesizes that:

*Hypothesis-3 (H<sub>3</sub>): Knowledge Management significantly impacts Innovation.*

## RESEARCH METHODOLOGY

The purpose of this research was to examine the relationship between knowledge management and innovation (Product and Process Innovation) and its impact on organizational performance and also provide an integrated model of Knowledge Management – Innovation - Organizational Performance. The study chose a quantitative and deduction approach as per objectives discussed above. The details of instrument administration, data collection process and response rate are mentioned below:

### Instrument Administration, Data Collection and Response Rate

For this study, a survey instrument was used for empirical analysis with three dimensions consisting of 47 items. The knowledge management (SECI Model) and Innovation scale developed by Easa (2012) was used. KM was a multi-dimensional construct presented with four sub-dimensions, viz, socialisation (KMSP), externalisation (KMEP), combination (KMCP) and internalisation (KMIP). Socialisation was measured using seven items and remaining variables were measured six items each. Innovation scale measures respondents view about product innovation and process innovation with six items each. To measure Organizational Performance scale developed by Slavković and Babić (2013) was used. All the items were measured by using a five-point Likert scale (strongly disagree- disagree- neutral- agree- strongly agree); as it is one of the most commonly encounter scale for measuring attitudes (Bryman & Bell, 2015). Under this study, the researcher has used ‘random sampling method’ for selection of a sample. Simple random sampling method is the process of selecting of a sample in such a way that every unit of a total population has an equivalent and independent chance of being included in the sample. It is simple as well as most appropriate method for the population which is more or less homogeneous with respect to the characteristics under study. In first phase, a total of 530 questionnaires were distributed to the ‘Probationary Officers’ working in 90 branches of ‘Jammu & Kashmir Bank Ltd’ located in Jammu district out of which useable 292 questionnaires were returned. The response rate of filling up of the questionnaire across all the branches was 55.09%. However, this size was enough to get a representative sample from the population.

## DISCUSSION AND INTERPRETATION OF RESULTS AND ANALYSIS

### Exploratory Factor Analysis and Reliability

In the present study, EFA (Exploratory Factor Analysis) and PCA (Principle Component Analysis) are broadly applied and widely utilized statistical technique of rotation and extraction. After extraction the most crucial parameters is to decide as to how many factors to retain for rotation. Both over-extraction and under-extraction of factor retained for rotation can have deleterious effects on the results. This study utilizes to retain the entire factor with Eigenvalue greater than 1.0 (Velicer & Jackson, 1990). The next decision is about deciding about rotation methods. The main goal of rotation is ‘to simply and clarify the data structure’. The study used varimax rotation option. During extraction it has been insured that uniformly higher communalities with cross loading are obtained as suggested by (Velicer & Fava, 1998; Reise et al., 1993; Mulaik, 1990). Cross loading of 0.45 or higher of two or more factor have been discarded in the study (Tabachnick & Fidell, 2001). Furthermore, a loading of 0.5 or above have been considered in the study. Under knowledge management scale one item having factor loading less than 0.5 was dropped i.e. KMSP5-‘Expert Discussion’. Similarly, under innovation three items having factor loading less than 0.5 were dropped i.e. INNPd1-‘New ideas’, INNPd6 - ‘Market leadership’, INNPd1-Service methods. After EFA, Product Innovation was left with four items whereas Process Innovation was left with five items. Under organizational performance all the items were found having factor loading more than 0.5. After dropping some items out of instrument under EFA process next, the Cronbach’s alpha was used to check the internal consistency of the data. All the dimensions of knowledge management–socialisation, externalisation, combination and internalisation’s initial alpha values of 0.822, 0.811, 0.867, and 0.892, respectively reported satisfactory as the alpha values are more than 0.5 (Nunnally, 1975). For product innovation and process innovation, it is .774 and .890 respectively. The overall Cronbach’s alpha values for the main constructs knowledge management, innovation and organisation performance is recorded as 0.940, 0.853 and 0.826 respectively (See Table 1: EFA results of Knowledge Management, Innovation and Organisational Performance).

### CONFIRMATORY FACTOR ANALYSIS

In the present study, IBM® SPSS® AMOSTM 20.0 was used to test the CFA models for the constructs. Confirmatory Factor Analysis (CFA) was carried out to measure fitness, reliability and validity of three separate models for KM, INN and OP. In this study, an initial model was developed using

CFA. For multidimensional items two stages of CFA (CFA order-I & CFA order-II) CFA were performed whereas for single dimensional items one stage CFA (CFA order-I) was performed. The results passed the threshold values of Chi-squared test,  $\chi^2/df$ , RMR, GFI, AGFI, NFI, CFI and RMSEA indices that have been considered for the study. On cross checking it was seen that under Knowledge management seven items (KMEP2, KMEP1, KMSP1, KMSP2, KMCP6, KMSP4 and KMCP5), innovation three items (INNPr4, INNPr4 and INNPr6) and under organisational performance four items (OP1, OP2, OP10 and OP3) have loading less than 0.5 were removed. Furthermore, verification with modification indices indicates that there was high convergence between some of items and hence, those items were converged. The final models were good fit of knowledge management with three items in socialisation, four items in externalisation, four items in combination and six items in internalisation., three items in product innovation and four items in process innovation of innovation and six items in organizational performance. ( See Table 2 for final threshold values of Chi- squared test,  $\chi^2/df$ , RMR, GFI, AGFI, NFI, CFI and RMSEA indices for models with good fit of all the constructs.)

### Hypotheses Testing

In the present study, IBM® SPSS® AMOSTM 20.0 was used to test the hypotheses models for the constructs. All three hypotheses (KM→OP, INN→OP and KM→INN) were accepted as the t value of all the hypotheses were significant i.e. 4.754, 4.460 and 4.857 respectively (See Table 3 for Estimates for Hypotheses Testing).

### Structural Equation Modelling (SEM)

Structural Equation Modelling (SEM) is a multivariate technique that helps to examine multiple relationships between variable at the same time. To examine the relationship between knowledge management, innovation, organizational performance a structural equation model (SEM) has been used in this study. This study found literature provides a number of model fit indices but there exists a wide disparity in agreement not only in terms of threshold values but also which indices will be used. For the present study, absolute fit and incremental fit have been used which determine how well 'priori' model fit the sample data (Mc Donald & Ho, 2002) and demonstrate the most superior fit. Chi- squared test,  $\chi^2/df$  - CMIN/df or Normed Chi-square or Chi-square Fit Index divided by Degrees of Freedom, RMR- Root Mean Square Residual, GFI- Goodness of Fit Index, AGFI- Adjusted Goodness of Fit Index, NFI- Normed Fit Index, CFI- Comparative Fit Index and RMSEA- Root Mean Square Error of Approximation are the indices that

have been considered for the study. The direct path for KM→OP is significant; hence the researcher proceeded to prove if Innovation has a mediating effect between KM and OP. As indirect path between KM→INN is significant at 0.01 level of significance (t-value=9.985), however, indirect path INN→OP is insignificant (t-value=0.976). Therefore, the direct path (KM→OP) is reduced to -2.13 and indirect path (KM→INN) is reduced to 0.64. Hence, Innovation partially mediates KM and OP (See Table-4 Path Analyses and Fig. 3 Measurement Integrated Model for KM-INN-OP).

### CONCLUSIONS

In today's environment, tremendously competitive necessitates for an organization to acquire some experience of how to organize its corporate assets (tangible and intangible assets) efficiently and effectively. According to Borgononvo and Peccati (2004), an organization can achieve superiority in the marketplace only if; it manages its knowledge assets within the firm. Long-term prosperity of many organizations depends on their Knowledge Management capabilities. With a paucity of required talent and extensively increased competition, organizations have to come across with some ways to retain skills, expertise and experiences within the organization. Hence, managing knowledge in organizations is very crucial. The purpose of this research was to examine the relationship between knowledge management and innovation (Product and Process Innovation) and its impact on organizational performance and also provide an integrated model of Knowledge Management – Innovation - Organizational Performance. In this Context, study analyzed relationship between Knowledge Management, Innovation and Organizational Performance where Innovation partially mediates Knowledge Management and Organizational Performance. The empirical results of SEM analysis also confirmed the framework formed on the basis of literature review and provides an integrated model for KM-INN-OP. The findings reveal that there exists a significance relationship between Knowledge management and Organizational Performance, thereby supporting the literature. Implementation of this model can help researchers, managers and practitioners to manage organizational resources in an effective and efficient way which consequential improves organisational performance.

### MANAGERIAL IMPLICATIONS

The banking industry is of dynamic nature with highest growth rate in the worldwide economy, is facing the challenges managing knowledge for banking operations to improve the overall business performance. Taking into consideration, the results obtained from the current study the following implications are recommended:

- The Indian banking industry should implement 'Knowledge management' practices as it contributes to increase employee skills that are essential at different levels of the organisation, particularly for solving issues/problems. Skilled staff and tactic minds may become a powerful means of the business's strategy. Knowledge management and innovation both are supporting system and a powerful source of knowledge flow to enhance Organizational Performance. In this context, banking management should concentrate on acquiring and sharing appropriate information within the banks and maintain a knowledge repository to increase the quality of its functions as well as maintain its profitability (Kridan & Goulding, 2006; Alrawi & Elkhatib, 2009; Cebi et al., 2010).
- Banks should follow two major approaches for effective implementation of knowledge management system; these approaches are human-oriented approach as well as the technology-oriented approach (Maier & Remus, 2003; Mizintseva & Gerbina, 2009). Under SECI model, Socialisation and internalisation processes are relate to the human-oriented approach of KM. This relates to personalizing knowledge by improving communication, new staff training, improving knowledge sharing and enhancing personnel development (Maier & Remus, 2003). On the other hand, Technology-oriented approach mainly relates with externalisation and combination processes of SECI which help to turn implicit knowledge into explicit knowledge by documentation and retention of knowledge and acquisition of external knowledge (Maier & Remus, 2003).
- In an organization, the quality of information/knowledge provided by personnel is mainly dependent on the level of 'willingness to share knowledge' with others (Barachini, 2009). Generally, the practice of 'informal discussions' ignored by banking management which negatively affect the relations among employees. Further, such ignorance leads to lack of trust, lack of pre-existing relationships, and lack of motivation in the personnel. To promote knowledge sharing, an organization should focus on encouraging informal discussions. Such practices of informal interactions such as setting arranging social events outside the workplace or setting common space etc. As a consequence of this, interaction between the personnel will increase and they become closer to each other and build faith. These exercises within the organisation influence employees to share knowledge and have a discussion about work issues and find common solutions.
- The study signifies that the combining of knowledge management and innovation is an essential key for

competitive edge in the form of client satisfaction and goodwill to enhance performance. Accordingly, the combination of such practices helps to take advantage of existing knowledge and new knowledge to create a unique corporate memory. Such repository of knowledge can solve a number of issues related to operational as well as functional level within the organisation.

## LIMITATIONS

Although this study increases our understanding related to the concept of Knowledge management, innovation and organizational performance and their relationships, viable prospects for further research remain. The unexplored facets of this research are, first the study is restricted to the probationary officers working in the J&K bank in Jammu district only and confined the possible range of banks in the industry. There are many other variables which have a great impact on organizational performance, which has not been taken into consideration in the present study. Demographic factors like age, gender, marital status, and educational qualifications may also have some inter-relationships with the knowledge management's SECI model but have not been analysed in the present study. To analyze the data, only quantitative research approach was used in this study. It is possible that such research can generate more comprehensive and valid models if it jointly made with a qualitative research.

## FUTURE RESEARCH DIRECTIONS

Future studies can be frame by investigating diverse demographic factors which will also make available more facts regarding how the use of each process of SECI model. A qualitative research can be conducted with key people i.e. top level of any organization as they play a vital role in managing knowledge within the organization. To get more generalisable outcome, future researchers can take up more comprehensive sample frame. The present research focused only on Knowledge Management and Innovation and their effect on organizational performance. However, organizational performance is a dependent variable and effect by so many other variables, which can be included in future research. It is also suggested to investigate the use of the SECI model in different cultural context as such studies will add to the debate about the universal application of the SECI model.

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## TABLES AND FIGURES

**Table 1: EFA Results of Knowledge Management, Innovation and Organisational Performance**

Dimensions and Factors	Codes and Items	Factor Loadings	Reliability	Variance (%)
Knowledge Management (KM)			0.939	66.259
Socialisation (KMSP)	KMSP1- Personnel rotation	0.819	0.809	
	KMSP2- Face to face discussion	0.805		
	KMSP3- Co-operative discussion	0.558		
	KMSP4- Meetings and workshops	0.563		
	KMSP6- Informal meetings	0.648		
	KMSP7- Social activities	0.801		
Externalisation (KMEP)	KMEP1- Staffs point of view	0.725	0.811	
	KMEP2- Negotiation with customers	0.784		
	KMEP3- Findings of meetings	0.516		
	KMEP4- Reports about externals	0.552		
	KMEP5- Training topics	0.646		
	KMEP6- Experience of expert	0.553		
Combination (KMCP)	KMCP1- Classification of internal information	0.780	0.867	
	KMCP2- Updating databases	0.774		
	KMCP3- Developing rules and decisions	0.746		
	KMCP4- Documented communication	0.530		
	KMCP5- External reports justification	0.505		
	KMCP6- Published research	0.572		
Internalisation (KMIP)	KMIP1- Related courses	0.738	0.892	
	KMIP2- Meetings outcomes access	0.728		
	KMIP3- Database access	0.771		
	KMIP4- Documents content explanation	0.668		
	KMIP5- External reports explanation	0.627		
	KMIP6- Shaping culture	0.722		
Innovation (INN)			0.853	65.740
Product Innovation (IN-NPd)	INNPd2- New services	0.802	0.774	
	INNPd3- New technologies	0.834		
	INNPd4- Non-traditional solutions	0.630		
	INNPd5- New facilities	0.766		
	INNPd6- New facilities	0.766		
Process Innovation (IN-NPr)	INNPd2- Process improvement	0.764	0.890	
	INNPd3- Management strategies	0.834		
	INNPd4- Structure changes	0.814		
	INNPd5- Competitor strategies	0.844		
	INNPd6- Marketing strategies	0.826		
	INNPd6- Marketing strategies	0.826		
Organizational Performance (OP)			0.826	53.665
	OP1- Capable of reducing costs	0.668	0.826	
	OP2- Growth / stability of income	0.793		
	OP3- Employees productivity	0.617		
OP3- Employees productivity	0.617			

Dimensions and Factors	Codes and Items	Factor Loadings	Reliability	Variance (%)
	OP4- Profitability level	0.634		
	OP5- Product/ services Quality	0.736		
	OP6-New Product / services development	0.676		
	OP7-Satisfaction of customer/ clients	0.757		
	OP8- Response to technological and market changes	0.674		
	OP9- Solve new problem	0.703		
	OP10- Good Reputation	0.651		

**Table 2: CFA Results of Knowledge Management, Innovation and Organisational Performance**

Indices	$\chi^2/df$	RMR	GFI	AGFI	NFI	CFI	RMSEA
Threshold Values	$\leq 3$	$< .1$	0.9-1	0.9-1	0.9-1	0.9-1	$\leq .05, > .05$ but $< 0.8$
Knowledge Management	2.389	.037	.905	.870	.908	.944	.069
Innovation	2.497	.020	.972	.939	.963	.977	.072
Organizational Performance	1.334	.012	.988	.968	.981	.995	.034

(\*Note:  $\chi^2/df$  - CMIN/df or Normed Chi-square or Chi-square Fit Index divided by Degrees of Freedom, **RMR**- Root Mean Square Residual, **GFI**- Goodness of Fit Index, **AGFI**- Adjusted Goodness of Fit Index, **NFI**- Normed Fit Index, **CFI**- Comparative Fit Index and **RMSEA**- Root Mean Square Error of Approximation)

**Table 3: Estimates for Hypotheses Testing**

Hypotheses		Model	Estimate	S.E	t	Sig.	Accepted/ Rejected
H <sub>1</sub>	Knowledge Management significantly impacts Organizational Performance.	KM→OP	0.333	0.070	4.754	Yes	Accepted
H <sub>2</sub>	Innovation has a significant impact on Organizational Performance.	INN→OP	1.008	0.226	4.460	Yes	Accepted
H <sub>3</sub>	Knowledge Management significantly impacts Innovation.	KM→INN	0.306	0.063	4.857	Yes	Accepted

**Table 4 Path Analyses**

Model	Path	Estimate	S.E	t (estimates/S.E)	Significance (Yes/No)
KM→OP	Direct Path	0.333	0.070	4.757	Yes
KM→INN	Indirect Path	0.679	0.068	9.985	Yes
INN→OP	Indirect Path	3.850	3.944	0.976	No

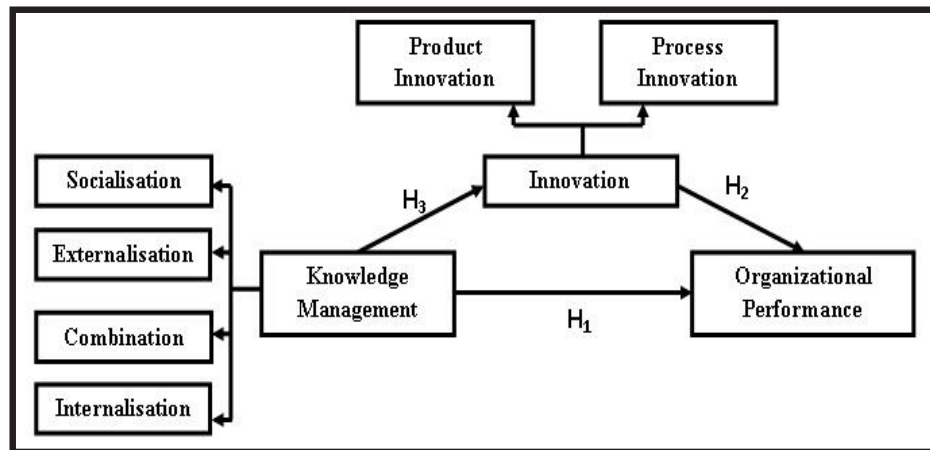


Fig. 1: Proposed Research Framework

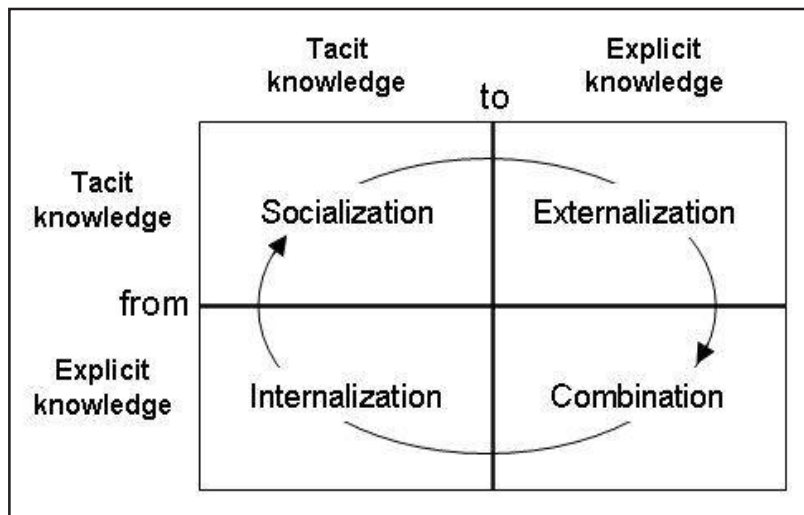


Fig. 2: Nonaka's Model of Knowledge Conversion

Source: Ikujiro Nonaka and Hirotaka Takeuchi, *The Knowledge Creating Company*, New York, Oxford University Press, 1995

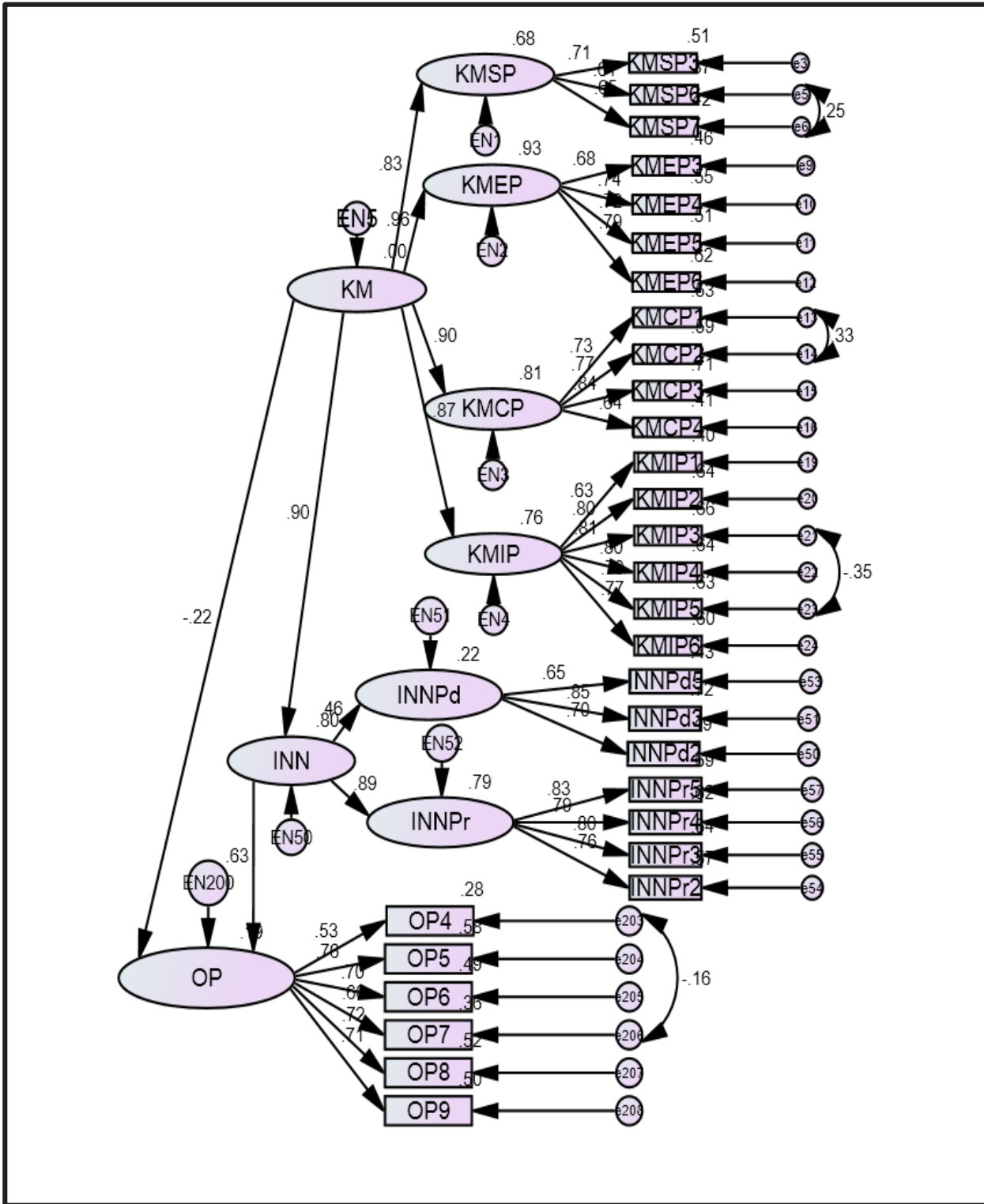


Fig. 3: Measurement Integrated Model for KM-INN-OP