









# Influence of AI-Enhanced Customer Insights on Service Innovation: Mediating Role of Knowledge Management in Bangladeshi Service Firms

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**Abstract.** This research explored on how AI-based customer insights affect SI in Bangladeshi service organizations with the mediating role of KM. The study is based on the KBV and examines the effect of organizational capabilities, DAC, EC, ITI, and LS, on SI. Through purposive sampling, a quantitative method was employed to gather data on the 314 managers, team leaders and employees in banks, telecommunication, education, and medical sectors. The relationships between the variables were analyzed by using PLS-SEM. It has been found that DAC, EC, ITI, and LS have a positive impact on SI, whereas KM partially mediates the impacts of DAC, ITI, and LS, which shows its subtle influence in the conversion of organizational resources into innovative results. In practice, the findings stress the importance of firms combining technological, human, and managerial resources and managing knowledge in a systematic manner to maximize innovation. The study has theoretical value by expanding KBV to the emerging economy and providing empirical data about the ability to leverage AI and KM to increase SI.

**Keywords:** AI-Enhanced Customer Insights, Service Innovation, Knowledge Management, Data Analytics Capability, Employee Competence, IT Infrastructure, Bangladeshi Service Firms.

## 1 Introduction

In the modern-day competitive and technologically enhanced business world, artificial intelligence (AI) has become the revolution that innovates service in a completely new way. Service organizations are also turning towards AI-enhanced customer insights to study dynamic behaviors in the market, anticipate customer preferences, and develop solutions tailored to the customers to promote customer satisfaction [19]. Such smart systems process large volumes of unstructured data to identify patterns that would otherwise be missed by human intuition to create more informed decision-making [1]. With companies aiming to provide customer value services, AI in customer relationship management has become imperative to continue the innovation. Through analytics, which is developed using AI, not only are the organizations enhancing operational efficiency, but the knowledge mechanism of capture, sharing, and utilization is also being redefined [11]. The development of AI technologies has become a great change in the service industry as it has brought intelligent systems that can learn during interactions with customers and create actionable information. The customer-driven and managerial-driven mechanisms of service innovation were considered traditional, but the development of AI has reconsidered them based on predictive analytics and automated reasoning [8]. The practical application of AI enables service companies to handle real-time information, uncover undetected tendencies, and build personalized approaches to communicating with consumers [21]. Additionally, AI helps to transform raw data into strategic knowledge, which is applied to the decision-making process and helps with knowledge-based innovation. The interaction of AI-insight with organizational knowledge management has thus emerged as a source of innovation outcomes. Since knowledge is one of the critical resources of service-based businesses, AI offers the depth of analysis needed to improve and broaden such knowledge base to maintain high competitiveness over time [9].

In Bangladesh, the wave of digital transformation in the service sector is getting very powerful due to the increased usage of AI tools in the banking, telecommunication, education, and healthcare sectors. Currently, customer analytics based on AI are being implemented by many organizations to enhance the quality of their services and develop new strategies to satisfy the demands of the new market [14]. These smart technologies can enable companies to predict customer preferences and automate some areas of providing services as well as create more adaptable solutions that would fit the Bangladeshi environment [15]. The service industry is a fast-moving environment, where companies are continuously turning to artificial intelligence and data-driven methods to improve customer insights and become innovative. Although numerous studies agree that the potential of AI enhanced insights may enhance service innovation, several service firms in Bangladesh are still finding it hard to effectively convert the insights into useful knowledge that leads to innovation [3]. Current research tends to consider specific abilities like data analytics capability (DAC) or IT infrastructure (ITI), but they give minimal consideration to the collective input of employee competence (EC), leadership support (LS) and company knowledge management (KM) to influence service innovation (SI) deliverables [6]. Moreover, even though it is acknowledged that KM is an essential moderator between technological aptitude and innovation, empirical

information on the topic among Bangladeshi service companies is limited [5, 17]. This gap indicates that a collective study on the impact of DAC, EC, ITI and LS on KM and consequently SI is necessary.

**RQ1:** In what ways do DAC, EC, ITI, and LS impact the management of knowledge within service firms in Bangladesh?

**RQ2:** To what extent does KM act as a mediator between organizational capabilities such as DAC, EC, ITI, and LS and the achievement of SI in Bangladeshi service organizations?

The main aim of this research is to explore how factors such as DAC, EC, ITI, and LS affect KM and how this, in turn, contributes to SI within Bangladeshi service firms. The study also intends to examine the mediating role of KM in connecting these organizational resources with successful SI outcomes, providing a clearer understanding of their combined impact. The current research is very valuable because it gives an in-depth insight into how the organizational capabilities, such as DAC, EC, ITI, and LS, are useful in integrating effective KM and accelerating SI. The research presents a viable contribution to Bangladeshi service firms to be able to use their resources more strategically by pointing to the mediating power of KM. Besides, this research also fills the gaps in the literature on technological capabilities, human resources and the effect of innovation outcomes in a local situation.

## 2 Research Model & Hypothesis Development

This research is based on the Knowledge-Based View (KBV) of the firm which argues that knowledge is the most strategic and useful resource in attaining the long term competitive advantage [4, 9]. KBV believes that organizations that create, share, and use knowledge in an effective manner are capable of establishing unique capabilities, which competitors can find hard to duplicate [7]. The KBV gives good rationale in the context of service firms to explore the contribution of DAC, EC, ITI, and LS to the knowledge management, which subsequently leads to SI. Through this point of view, the study puts special emphasis on the fact that both the technological and human resources are not only useful in their raw form but also in the way they help to create, preserve and use the organizational knowledge [5, 6]. The KBV model is especially appropriate in this study since the key factor is the focus on knowledge as an intermediary, between organizational competencies and the results of innovations. This theoretical perspective supports the idea of paying attention to knowledge management as one of the most significant processes in accordance with which companies could transform AI-inspired customer insights and internal capabilities into useful service innovations. Therefore, KBV endorses the conceptual model and the presumed links and forms a strong basis to the study of the interaction between the organizational capabilities, knowledge processes, and innovation performance.

DAC helps organizations to gather, analyze, and evaluate vast customer and market data, which can be applied to detect new trends and make decisions [5]. Service

companies can use these insights to create new services, become more efficient, and react better to the needs of their customers [9]. Also, robust DAC enable companies to anticipate future needs of the market, minimize uncertainties, and make proactive decisions that encourage SI [6]. The combination of data-driven information with the organizational KM increases the capacity of the firm to convert raw information into actionable knowledge, which is needed to ensure continuous innovation. According to the KBV, data analytics knowledge is an important resource in organizations that will facilitate the creation of distinct capabilities and innovative results. Thus, the hypothesis developed is intended to investigate the direct effect of DAC on SI according to the framework of KBV.

**H1:** DAC is expected to have a positive and significant influence on SI in Bangladeshi service firms.

EC is the knowledge, skills and abilities held by employees that they carry to their jobs, which are crucial towards uncovering opportunities, finding solutions and executing novel solutions in service companies [7]. Skilled workers are able to understand their customer and provide best practices or team up to create new services or enhance the one provided [5]. Moreover, the presence of high EC can help organizations to be flexible to the process of changing market needs and incorporate technological tools (including AI) into their processes of services to become innovative [2]. The KBV provides that human capital is a key source of knowledge that facilitates creation, sharing, and usage of organizational knowledge which in the end drives SI. Thus, this is the hypothesis that will be used to identify the direct effect of EC on SI among Bangladeshi service companies.

**H2:** EC is proposed to positively and significantly affect SI in Bangladeshi service firms.

ITI is the technological resources, systems and networks that facilitate processing and communication of information in an organization. A powerful ITI allows the service companies to collect, store, and analyze data, which can be utilized to utilize them to design and offer creative services [20]. Strong IT systems help to make decisions faster, improve interaction between employees, and contribute to the implementation of modern tools, including AI and analytics, which are essential in developing SI [17]. Also, properly developed ITI enables companies to react to evolving market requirements more efficiently and act on customer-focused solutions on time [16]. The KBV argues that ITI is a very critical factor in helping to transform organizational resources into actionable knowledge, which eventually helps in the formation of innovative capabilities. Thus, the hypothesis is developed to investigate the direct impact of ITI on SI of Bangladeshi service firms.

**H3:** ITI is hypothesized to have a positive and significant effect on SI in Bangladeshi service firms.

LS denotes the degree to which the organizational leaders should give directions, resources, and support to promote innovative activities in the company. High LS will make employees feel motivated and enabled to experiment with new ideas and take

calculated risks and introduce new solutions in service processes [18]. Leaders who are proactive in supporting innovation aid the alignment of organizational objectives and employee efforts, collaboration and provision of sufficient resources and infrastructure to support development of services [5]. Moreover, LS is instrumental in instilling a culture of knowledge sharing that will enable the insights and experiences to be fully applied in the development of new services. The KBV argues that leadership in knowledge creation, transfer, and application is necessary in providing knowledge that ultimately increases the innovation capabilities of a firm. In accordance with this rationale, the hypothesis given below is formulated to test the effect of LS on SI among Bangladeshi service companies.

**H4:** LS is anticipated to positively and significantly impact SI in Bangladeshi service firms.

KM is a systematized activity of developing, capturing, storing and distributing organizational knowledge to enhance the outcomes of decision-making and innovation. Making use of effective KM, service firms are able to convert personal and shared knowledge into operational strategies, which may result in the creation of new or better services [4]. Through effective knowledge management, an organization is able to minimize redundancy, increase collaboration, and utilize expertise within the departments, all of which are crucial in the development of SI [22]. Also, KM helps to unite the capabilities of technological applications, including the use of AI-based analytics, with the human experience to create new solutions to meet the needs of customers [2]. KBV reveals KM as the most important organizational asset, and its sound management is the key to maintaining competitive advantage and innovation. Thus, this hypothesis will be used to examine how KM directly affects SI among Bangladeshi service companies.

**H5:** KM is expected to have a positive and significant influence on SI in Bangladeshi service firms.

## 2.1 Mediating Role of Knowledge Management (KM)

KM may play the key role of connecting DAC and SI. Although DAC will allow companies to collect and interpret vast amount of customer and market data, the insights derived will not necessarily have innovative results unless they are effectively captured, shared and implemented using KM [2]. Effective KM can make sure that valuable information obtained through analytics is converted into actionable knowledge, which will allow making better decisions, collaborating, and generating ideas [7]. This is the process that enables firms to use DAC in systematic manner that develop new or even improved service, and increase their innovation level [22]. The KBV suggested that knowledge can be seen as a fundamental organizational asset, and their management is necessary to transform technological and human potential into innovation. Hence, it is suggested to use KM as a mediating variable to comprehend how DAC eventually affects SI in Bangladeshi service companies.

**H6a:** KM is expected to mediate the relationship between DAC and SI.

KM may be a critical factor in connecting EC and SI. Though effective employees will introduce effective skills, knowledge, and expertise in the organization, the personal abilities might not necessarily lead to innovative results without appropriately capturing, sharing, and utilizing them using KM [22]. Using appropriate KM practices, the knowledge and experience of employees can be arranged into practical knowledge, which can assist in cooperation, decision-making, and innovative problem-solving [4]. This process is used to make sure that the knowledge held in the human capital is put to a systemic use in order to design and offer new or improved services, thus increasing the degree of innovation in the firm [2]. To the KBV, human knowledge is a valuable organizational asset, and its management is critical as it transforms personal skills to practical innovation. Thus, KM as a mediator is suggested to study the effect of EC on SI in Bangladeshi service companies.

**H6b:** KM is expected to mediate the relationship between EC and SI.

KM could serve as an important intermediary between ITI and SI. Although ITI is essential in offering the technological systems, networks, and tools required to process and analyze information, these resources in themselves may not translate into innovative services unless the knowledge created is effectively captured, organized and put to use through KM [16, 22]. Successful KM would make sure that the experiences gained in the IT systems are converted into practical knowledge that could be used in decision-making, facilitate interaction and promote innovative thinking in the organization [20]. Through a systematic management of this knowledge, companies are in a position to utilize ITI better in the design and implementation of new or better services enhancing their ability to innovate [17]. KBV wisdom provides a different viewpoint that IT resources are only useful when they are incorporated into knowledge processes and are used to translate the technological capabilities into concrete results of innovation. Consequently, KM is suggested as an intermediary to test the role of ITI on SI in Bangladeshi service companies.

**H6c:** KM is hypothesized to mediate the relationship between ITI and SI.

KM may serve as an important interpreter between LS and SI. Although LS offers guidance, material, and motivation to encourage innovative undertakings, these initiatives may not inevitably lead to actual innovation unless the knowledge generated, disseminated and implemented in the organization is efficiently handled with the assistance of KM [5]. Proper KM can make sure that the knowledge and information offered by managers are properly recorded and transferred to a structured form of actionable knowledge needed to help make decisions, cooperate, and come up with innovative solutions [7, 22]. Firms can utilize KM by maximizing the efforts of leadership initiatives to match the skills of the staff and the technological capabilities of this to design and execute new services [18]. According to the KBV, leadership is essential in terms of leading the process of creation and usage of knowledge that eventually augments the innovation outcomes of a firm. Consequently, KM is the suggested mediator to investigate the role of LS as an influencer of SI in Bangladeshi service companies.

**H6d:** KM is proposed to mediate the relationship between LS and SI.

Based on the discussion above, the conceptual framework is presented as shown in Fig. 1.

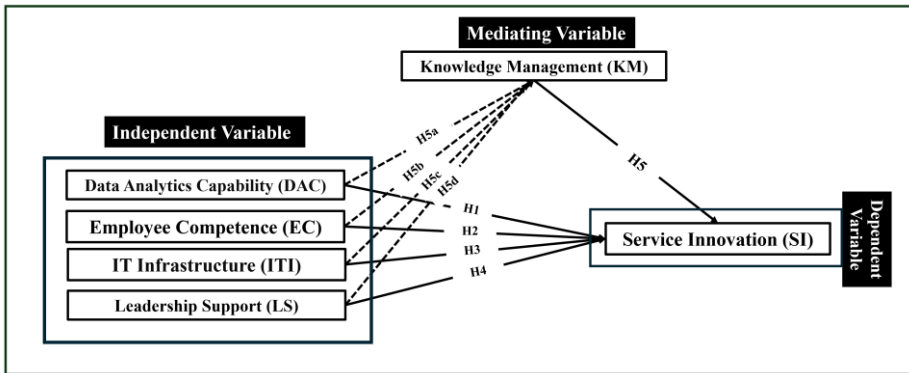


Fig. 1. Conceptual Framework

### 3 Materials & Method

The research methodology used in this study was quantitative research to examine how AI-intensified customer insights affect SI and KM is a mediating variable. Quantitative approach was chosen as it provides the possibility of systematic measurement of variables and provides the possibility to test hypothesized relationships in a rigorous way. Primary data were gathered using respondents as participants to make sure they are relevant and reliable in terms of illustrating actual organizational practices. The population was comprised of managers, team leaders, and employees of service companies in Bangladesh since these were the personalities who were directly engaged in utilizing AI tools and KM activities. Individual employees were the unit of analysis because their views indicated organizational capabilities as well as the SI outcomes. A sequential process was used in data collection to increase clarity and reproducibility. To begin with, the sampling rationale was determined by determining the respondents that had close interaction with AI-enhanced customer insights and SI activities. Second, the measurement measures were based on validated scales and pre-tested on domain experts to make them clear, relevant, and appropriate. Third, information was obtained through a mixture of in-person and online questionnaires and was further coded to make them analyzable. Lastly, PLS-SEM test measurements and structural models were tested using SmartPLS 4. The purposive sampling method was used to use those respondents who had firsthand experience with AI-based customer insights and innovation practices [13]. Although this method guaranteed that the participants had the experience that was relevant, it can bring about selection bias. To overcome this, the study was also characterized by a varied sample of service industries, including banking, telecommunications, education, and healthcare and the data were gathered at different organizational levels. The number of responses gathered was 314, which is adequate to conduct SEM with the use of SmartPLS 4, a popular software in PLS-SEM analysis.

The respondents rated the degree of agreeableness with each statement on a scale between 1 to 5 with 1 denoting extremely low level of agreeableness and 5 representing extremely high level of agreeableness to evaluate perceptions and experiences in a subtle manner. The questionnaire was pre-tested with the domain experts to ensure the refinement of the items in terms of clarity, relevance and completeness and minor modifications were done as per their response. Validity of the measurement scales was also verified by conducting measurement of content, convergent and discriminant validity and reliability was verified by internal consistency measures. Upon data collection, the data were coded and analyzed in SmartPLS 4. Cronbach  $\alpha$  was used to measure reliability whereas internal consistency and convergent validity were measured by composite reliability (CR) and average variance extracted (AVE). The Fornell-Larcker criterion was used to assess the discriminant validity. PLS-SEM was used to test hypotheses and conduct path analysis, which enabled the simultaneous evaluation of measurement and structural models, and test direct and mediating influences. Measures of predictive power of the model were done in explained variance ( $R^2$ ) and adjusted  $R^2$ . The mathematical equations used were:

$$\alpha = \frac{K}{K-1} \left( 1 - \frac{\sum_{i=1}^K \sigma_i^2}{\sigma_f^2} \right) \quad (1)$$

$$CR = \frac{(\sum \lambda_i)^2}{(\sum \lambda_i)^2 + \sum \theta_i} \quad (2)$$

$$AVE = \frac{\sum \lambda_i^2}{\sum \lambda_i^2 + \sum \theta_i} \quad (3)$$

$$t = \frac{\beta}{SE_{\beta}} \quad (4)$$

$$R^2 = 1 - \frac{\sum (y_i - \hat{y}_i)^2}{\sum (y_i - \bar{y})^2} \quad (5)$$

According to Table 1, the Constructs have a high internal consistency, with a 0.80 to 0.87 Cronbach  $\alpha$  these factors suggest that the items used in the measurement scale are reliable to measure the Constructs. These are values that are greater than the recommended value of 0.70, which justifies the reliability of the scales applied in this study [12].

**Table 1.** Reliability Assessment of Constructs

Constructs	Items	Cronbach's $\alpha$
DAC	5	0.85
EC	5	0.86
ITI	5	0.80
LS	5	0.85
KM	4	0.87
SI	3	0.85

## 4 Results & Findings

The demographic profile of respondents is displayed in Table 2 that reveals that there is a relatively equal number of the male (53.2%), and female (46.8%)-participants. Most of the respondents were in the age group 32-38 years (39.8%), they had Bachelor (44.3%), or Master (43.0%) degree. Most of the respondents were of the middle level (46.2%) and served in the marketing, IT, and operations departments. Moreover, more than half of the respondents (58.9%) used AI tools, with most of them having moderate and highly digital literacy levels, which means that the workforce could be involved in AI-powered practices.

**Table 2.** Demographic Profile of Respondents

Variable	Category	Frequency	Percent (%)
<b>Gender</b>	Male	167	53.2
	Female	147	46.8
<b>Age</b>	25–31 years	101	32.2
	32–38 years	125	39.8
	39–45 years	88	28.0
<b>Educational Qualification</b>	Bachelor's Degree	139	44.3
	Master's Degree	135	43.0
	Others	40	12.7
<b>Current Position</b>	Entry-level	83	26.4
	Mid-level	145	46.2
	Senior-level	86	27.4
<b>Department</b>	Marketing	101	32.2
	IT	97	30.9
	Operations	116	36.9
<b>Years of Experience</b>	1–5 years	103	32.8
	6–10 years	112	35.7
	11+ years	99	31.5
<b>Industry Sector</b>	Banking	73	23.2
	Telecommunications	79	25.2
	Education	61	19.4
	Healthcare	101	32.2
<b>Use of AI Tools</b>	Yes	185	58.9
	No	129	41.1
<b>Digital Literacy Level</b>	Low	93	29.6
	Moderate	121	38.5
	High	100	31.9
<b>Total</b>		<b>314</b>	<b>100</b>

Table 3 shows the convergent validity and internal consistency of the study constructs. The item loading values are all above the recommended value of 0.70 and CR values are between 0.80 and 0.89 with an AVE ranging between 0.55 and 0.77, which

has ensured that its internal consistency is high and that the CV is satisfactory. These findings suggest that the measurement items are a good reflection of their corresponding constructs and that a large percentage of variance is accounted by the latent variables making them worth using in further structural analysis [12].

**Table 3.** Internal Consistency and Convergent Validity of Constructs

<b>Constructs</b>	<b>Item</b>	<b>Loading</b>	<b>CR</b>	<b>AVE</b>
<b>DAC</b>	DAC1	0.80	0.85	0.62
	DAC2	0.80		
	DAC3	0.84		
	DAC4	0.71		
	DAC5	0.80		
<b>EC</b>	EC1	0.70	0.89	0.63
	EC2	0.78		
	EC3	0.89		
	EC4	0.88		
	EC5	0.68		
<b>ITI</b>	ITI1	0.73	0.80	0.55
	ITI2	0.77		
	ITI3	0.75		
	ITI4	0.76		
	ITI5	0.71		
<b>LS</b>	LS1	0.70	0.86	0.62
	LS2	0.86		
	LS3	0.81		
	LS4	0.79		
	LS5	0.76		
<b>KM</b>	KM1	0.82	0.88	0.73
	KM2	0.92		
	KM3	0.88		
	KM4	0.79		
<b>SI</b>	SI1	0.94	0.86	0.77
	SI2	0.83		
	SI3	0.87		

The analysis of the discriminant validity between the Constructs is given in Table 4. The diagonal values, which are the square root of the AVE, are greater than the inter-construct correlations, which is to say that each construct is positively related to measures of each construct to a greater degree than to the rest. This indicates that the constructs are different and have different concepts and therefore they should be used in the additional SEM analysis [10, 13].

**Table 4.** Assessment of Discriminant Validity

<b>Constructs</b>	<b>DAC</b>	<b>EC</b>	<b>ITI</b>	<b>LS</b>	<b>KM</b>	<b>SI</b>
<b>DAC</b>	0.79					

<b>EC</b>	0.73	0.79				
<b>ITI</b>	0.55	0.52	0.74			
<b>LS</b>	0.52	0.46	0.83	0.79		
<b>KM</b>	0.54	0.44	0.81	0.84	0.85	
<b>SI</b>	0.56	0.45	0.80	0.81	0.76	0.88

In Table 5, the findings of the path analysis and hypothesis test are provided. The results suggest that DAC, EC, ITI, and LS exert positive significant direct effects on SI, which is shown by their T-statistics, and p-values which support H1, H2, H3, and H4. Nonetheless, KM did not show a significant direct impact on SI (H5 rejected), which implies that KM in this case might not produce innovation directly. Concerning the mediation effect of KM, it played a significant mediator in the relationships between DAC, ITI, and LS and EC and SI (H6a, H6c, H6d were accepted), but not between EC and SI (H6b was rejected) [12]. These findings do draw our attention to the fact that organizational capabilities including DAC, ITI, and LS have the potential to contribute to innovation using KM; however, EC might need some mechanisms to turn into the results of innovation. The table highlights the mediating nature of KM in the relation between the organizational resources and SI in the Bangladesh service companies.

**Table 5.** Path Analysis and Hypothesis Testing Results

<b>Hypothesis</b>	<b>Path</b>	<b>T statistics</b>	<b>P values</b>	<b>Decision</b>
<b>H1</b>	DAC → SI	3.95	0.00	Accepted
<b>H2</b>	EC → SI	1.97	0.05	Accepted
<b>H3</b>	ITI → SI	5.95	0.00	Accepted
<b>H4</b>	LS → SI	7.75	0.00	Accepted
<b>H5</b>	KM → SI	1.24	0.22	Rejected
<b>H6a</b>	DAC → KM → SI	2.71	0.01	Accepted
<b>H6b</b>	EC → KM → SI	1.82	0.07	Rejected
<b>H6c</b>	ITI → KM → SI	5.41	0.00	Accepted
<b>H6d</b>	LS → KM → SI	11.28	0.00	Accepted

Table 6 indicates explained variance (R<sup>2</sup>) of KM and SI. KM and SI explain 75 and 73 percent of the variance, respectively, meaning that the model has a great predictive power, and the organizational capabilities included can adequately describe the difference in innovation results [12, 13].

**Table 6.** Explained Variance (R<sup>2</sup>)

<b>Construct</b>	<b>R<sup>2</sup></b>	<b>R<sup>2</sup> adjusted</b>
<b>KM</b>	0.75	0.75
<b>SI</b>	0.73	0.73

*Note: KM = Knowledge Management (Mediating Variable); SI = Service Innovation (Independent Variable)*

Fig. 2 shows the PLS-SEM structural model that examines several factors that shape SI. This model explains 73% of the variance in SI ( $R^2 = 0.73$ ) which implies that it has a high explanatory potential and satisfactory predictive ability [13].

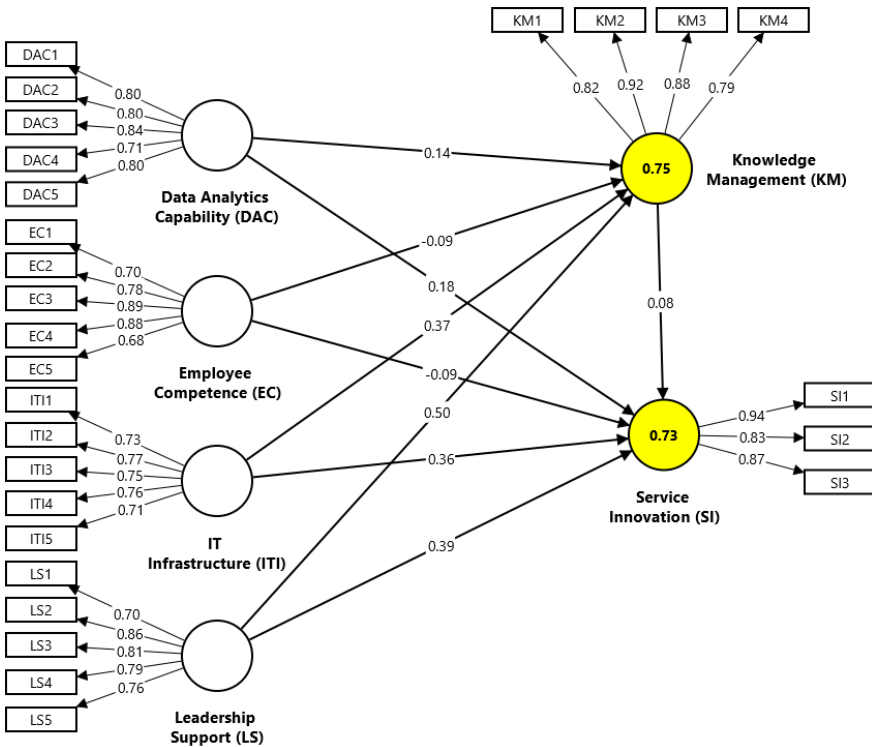


Fig. 2. Structural Equation Modelling (PLS SEM Approach)

ITI is one of the Constructs that has a significantly positive effect on SI ( $\beta = 0.36$ ), and LS also exerts a significant effect, including positive ( $\beta = 0.39$ ), which proves that positive technological configuration and supportive leadership can lead to service innovation. The contribution of EC is less though positive ( $\beta = 0.18$ ) indicating that the skilled employees contribute to innovative outcomes. Nonetheless, the correlation between DAC and analytics is slightly negative ( $\beta = -0.09$ ), which indicates that decisions that are made using analytics may not necessarily be innovative. Moreover, KM largely influenced by ITI ( $\beta = 0.50$ ) explains its 75 percent variance ( $R^2 = 0.75$ ) [13].

## 5 Discussion and Contribution of the Study

This study examined the impact of AI-enhanced customer insights on SI in Bangladeshi service companies with the mediating KM. Based on the KBV, the study investigated the direct relationship between the organizational capabilities DAC, EC, ITI and LS with SI, and the mediating power of KM in converting these resources to the

innovative results. The research employed SmartPLS 4 to do SEM using a purposive sample of 314 respondents that were in service industries such as banking, telecommunications, education, and healthcare using a quantitative approach. It was found that DAC, EC, ITI, and LS had a positive effect on SI, and KM moderated the relationships, which is an important but subtle position. These results highlight that business innovation of services in new economies such as Bangladesh should be enhanced through effective incorporation of technological, human, and managerial resources.

### **5.1 Contribution of the Study**

This study is a theoretical extension of the KBV since it shows how AI-led insights with organizational strengths can be beneficial knowledge resources to improve SI. Although earlier studies tended to analyze them separately, the current research offers a relatively combined view, as it includes the consideration of DAC, EC, ITI, and LS, and the partially mediating role of KM changing these resources into the level of innovation [11, 15]. This leads to the realization of KM processes in the emerging markets and empirical evidence on the support of KBV in terms of Bangladeshi service firms. The results can be put into practice to provide useful information to managers at service organizations. The findings indicate that companies should not merely invest in advanced AI and IT systems but also enhance the competency of employees and support leadership to fully utilize the knowledge of the organization to be innovative. With the awareness of the partial mediation of KM, managers are now in a better position to adopt knowledge-sharing behaviors, help people collaboratively solve problems, and maximize the utility of AI-enhanced knowledge on service design and improvement. This is able to improve the operational efficiency, customer satisfaction and the long-term competitiveness [3, 19]. This research contributes empirically to the existing knowledge on AI-enhanced service innovation in Bangladeshi setting by offering strong quantitative support on the role of joint operation of technological, human, and managerial capabilities in predicting outcomes of innovation. The research establishes that KM is an important process by which organizational resources impact innovation, but the effect of KM can be more focused by the type of capability, which provides subtle suggestions in future empirical studies.

## **6 Conclusion and Future Research Directions**

The study examined how AI-enriched customer insights could be applied in stimulating innovation in services of Bangladeshi service companies, considering the mediating role played by KM. These findings showed that organizational resources (DAC, EC, ITI, and LS) are particularly important in improving SI with KM having a subtle yet significant mediating role between them. The implications of the results are that companies can perform more successful innovation when technological, human, and management resources are properly combined, and knowledge is properly gathered and put into practice. The findings also emphasize the fact that the differences might be industry different, AI implementation and the use of knowledge management may be different in different industries, including banking, telecommunication, education, and

healthcare, which implies that industry-specific approaches might be needed. Practically, the research highlights the necessity to reinforce the abilities of employees, foster leadership assistance, and introduce efficient knowledge management systems and AI tools. It is worth pointing out that PLS-SEM does not offer any evidence on causal relationships, however, the results can be viewed as evidence of worthy relationships and not causality. In theory, the research will add to the KBV by demonstrating that AI-based insights and organizational combined capabilities create valuable knowledge on innovative practices. To carry out future research, longitudinal research or qualitative studies may be carried out to identify the dynamic nature and context-specific processes of AI, KM, and SI over time. Other possible mediators or moderators that may be introduced include organizational culture or absorptive capacity and the model might need to be tested in other emerging markets to improve on the generalizability.

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