Exploring Moderation In Service Dominant Logic-
Service Innovation Relationship In Tourism
Sector-A PLS Analysis

Rachita Sambyal, Amandeep Singh Marwaha, Anupreet Kaur Mavi

Abstract: Service dominant logic conceptualizes the complex interaction and interdependences among the actors involved in the service creation process to deliver value to the end customer. The paper explores the strength of relationship between the foundational premises of SDL & Service Innovation along with the moderating effect of the connectivity, network ubiquity, open standards and specialization on their relationship in the hotel industry. Data for the study was collected from 96 managers of Jammu and Kashmir Tourism Development Corporation. Output from SmartPLS showed that developmental and empowered interaction capability has the strongest relationship with the SDL whereas the connectivity and network ubiquity had the strongest moderating effect leading the service innovation. The study suggested periodic in house management development programmes, qualification improvement, collaboration with all the local stakeholders (government and private), rewarding employee for bringing innovative ideas and free flow of the information among all the stakeholders will help the tourism and hospitality organizations to increase customer traffic and build revisit intention.

Index Terms: JKTDC, Moderation Analysis, Partial Least Square, Service Dominant Logic, Service Ecosystems, Service Innovation, Tourism,

1. INTRODUCTION

Service industry began to gain a pivotal role in the world economy by early 1980s and drew the focus of the researchers worldwide. Continuing with the evolution, the impact of service industry became widely visible as it began transcending across the industries spanning on continuum of the manufacturers to pure players. During 1970s-1990s renewed focus on service sector coupled with emphasis on collaboration, co-production, co-creation & communication the marketing viewpoint began to shift toward from goods to service and services were considered as a perspectives for any offering[37],[4],[12],[22] and converged into the idea of Service Dominant Logic(SDL). The idea of SDL revolves around the service –for-service exchange using the specialized knowledge of the entities involved the value creation process to be delivered to the interested party. It is widely acknowledged as foundation of relationship marketing as it focuses on efficiency, long term effectiveness [7], removal of the producer-consumer variation by emphasizing collaborative model of value creation and integrating a set of private and private resources [13],[32]. Among service sector, tourism is a major source of foreign exchange earnings; generates employment for unskilled, semi-skilled and skilled manpower; source of earning for public and private sector; facilitates culture exchange; publicizes country image besides promoting interconnectedness throughout the world. The benefits of service innovation in tourism are manifold ranging from sustainability of a firm's current market share, gaining a competitive edge, enriching customers' experiences, elevating the performance and improving economic viability of firm to delivering additional value to their customers [33]. According to UNWTO report, 2020 the economy will contribute to be outpaces by the international tourists arrival with growth rate of 3%- 4% worldwide. To meet this flooding demand, it will become imperative for all the stakeholders of tourism including people involved in boarding, lodging, accommodation, transportation, food & beverages etc to collaborate together and deliver a memorable experience to the tourist

The current study is based on the Jammu and Kashmir Tourism Development Corporation (JKTDC) located in Union territory of Jammu and Kashmir, which shares its international boundary with the countries like Pakistan, Afghanistan, China, Russia and Turkistan. JKTDC was established by the Govt. of J&K on Feb.13, 1970 with the vision to promote and operate schemes for development of tourist traffic in J&K state. It provides cottages and Dak bungalows, run cafeterias & restaurants and canteen services to the civil sectt. employees at Jammu and Srinagar. It is the first organization in Jammu and Kashmir to have the virtual private network in order to facilitate online booking and tourism information dissemination. The Corporation presently has 1080 regular and daily wage employees working in different capacities in various units. On an average Rs. 984.00 lakhs are annually released on account of salary and allowance to these employees. At present, the Corporation has accommodation capacity of 2200 beds per day and runs 37 restaurants and cafeterias across Jammu and Kashmir. Apart of these, facilities of dormitory, clock room, club, kiosk, shop and prefab rooms are also provided to tourists. Further to promote tourist traffic, the package tours, food and cultural festivals are being organized at Delhi, Bangalore, Goa, Indore, Hyderabad, Dubai etc. The administrative machinery available for tourism development in J&K state are Department of Tourism, Jammu & Kashmir Tourism Development Corporation Limited (JKTDC), Tourism Development Authorities (TDA), Jammu and Kashmir Cable Car Corporation (JKCCC), Department of Floriculture, Lakes and Waterways Development Authority (LAWDA), Clubs & Societies and other agencies namely Directorate of Archives, Archaeology and Museums, Jammu and Kashmir Academy of Art, Culture and Languages etc. Owing to political instability, Investment from the private players in J&K has declined over time. This has lead to increase in the burden on the government machinery to meet the demand of the tourists and ensure building of a memorable experience which will lead to

- Rachita Sambyal is Assistant Professor at UIAMS in Panjab University, India, E-mail: rachitasambyal@gmail.com
- Amandeep Singh Marwaha is Training and Placement Officer at UIAMS in Panjab University, India, E-mail: amanmps@hotmail.com
- Anupreet Kaur Mavi is Assistant Professor at UIAMS in Panjab University, India, E-mail: anumavi75@gmail.com
revisit intention. Since JKTDC is the largest public sector corporation, providing hotel services across J&K, this study explores how the concept of SDL can be applied on the existing infrastructure (physical and people) by integrating all six SDL dimensions and how they finally lead to service innovation. The study also examines the moderating effect of work procedures like open standard, specialization, connectivity and network ubiquity on the relationship of SDL and service innovation. The research outputs of the paper would benefit both JKTDC for renewing focus of service delivery methods, which would eventually improve JKTDC’s competitive edge, business reputation and loyalty among internal & external customers.

2. CONCEPTUAL AND THEORETICAL FRAMEWORK OF SDL, SERVICE INNOVATION AND MODERATORS

S-D logic views the customer as an operant resource which is capable of acting on other resources, a partner who participates in the co-creation process with the firm [30] and encourages a “market with” philosophy. Compared to earlier goods dominant logic, in S-D logic, ‘Products’ are viewed as service flows, promotion is replaced by interaction and negotiations with the customer, price is replaced with proposition created by both sides of the exchange and place is reformulated with value networks and processes [31]. S-D logic orientation brings greater specificity of firm operant resources, competitive typologies thereof creating value proposition for customers, specifying inter-firm value creating processes by embedding in routines and organizational learning, generating economic localization that produce cluster benefits etc.[21]. Researchers have enticed following six interaction centric capabilities that facilitate and enhance value co creation & collaboration with customers [5]. Individuated Interaction Capability (IIC): It is an organization’s ability to integrate resources for desired outcomes with individual customers and value network partners. Relational Interaction Capability (RIC): It is creation and enhancing social and emotional linkages with customers and value network partners. Ethical Interaction Capability (EIC): It relates to an organization’s ability to deal with customers and value network partners in a fair and transparent manner. Empowered Interaction Capability (EMC): It is an organization’s ability to shape the nature and content exchange with internal and external stakeholders. Developmental Interaction Capability (DIC): It refers to an organization’s ability to increase competence and knowledge of customers and other value network partners. Concerted Interaction Capability (CIC): It is an organization’s ability to synchronize service processes with customers and value network partners. Thus, S-D Logic orientation amalgamate resources both tangible and intangible in the service ecosystem of actors to improvise service innovation. Since the word ‘Innovation’ has been coined [24], it has been broadened with advances in service science and redefined as co-creation of value various roles, experiences and evaluated by customers. Service innovation has been defined as a process which applies/uses specialised competences for the benefit of the self or other entity [30]. This in turn exercises an effect on business including creating favourable memorable service experience among customers [31]. In the context of tourism, service innovation might bring competitive advantage to all the entities involved in service delivery i.e. hotels, IS provider(s), local business, souvenir & handicraft shop, transportation firms, customer etc.. With the integration of information technology and service science, hotels are offering a variety of value-added services including different types of cuisines, wellness centres, conference rooms, swimming pools, spa facilities, beauty salons, and many other facilities to all types of travellers. The focus of service innovation is on change in structure resulting in either development of resources or a new set of schemes that are valuable. The service benefits all the participants in the service ecosystem [2] i.e. hotels, IT system providers, local businesses (restaurant, shop, pub, etc.) and customer. Extensive literature postulates the role of open standards, specialization, connectivity and network ubiquity in moderating the relationship between S-D Logic and service innovation. Open standards facilitates collaboration and stimulates innovation. Specialization encourages increased interdependency, collaboration, greater financial stability, customer benefits and opportunities for growth for all competitive businesses. Connectivity promotes flexibility, increase in sale, reduction in operating costs, customized quality services, etc. Network ubiquity is a binding force wherein process, operand and operator are associated to each other. It accelerates other moderators leading to more service innovation. Based on the review, following objectives are formulated for the study (Fig 1). Objective 1: To study the relationship between the six dimensions of SDL and Service Innovation.

Hyp1a: IIC, RIC, EIC, EMC, DIC and CIC are associated to Service Dominant logic.
Hyp1b: Service Dominant Logic leads to Service Innovation.

Objective 2: To study the moderating effect of Connectivity, Network Ubiquity, Opens Standards and Specialization on the relationship between SDL and service innovation.

Hyp2a: Connectivity significantly moderates the relationship between SDL and SI.
Hyp2b: Network Ubiquity significantly moderates the relationship between SDL and SI.
Hyp2c: Opens Standards significantly moderates the relationship between SDL and SI.
Hyp2d: Specialization significantly moderates the relationship between SDL and SI.

3 RESEARCH DESIGN AND METHODOLOGY

In this section, we followed detailed methodology to meet our objectives and test hypotheses.

Stage 1: Generation of Scale Items

![Conceptual diagram of relationship between SDL and Service Innovation along with the moderators.](image)

Stage II: Questionnaire Design

On the basis of literature review, and discussion with managers of hotel industry, a questionnaire was developed. After the pretesting, questionnaire was finalized which consisted of 5 items (General information) and 37 items (IIC), 9 items (RIC), 11 items (EIC), 8 items (EMC), 8 items (DIC), 5 items (CIC), 3 items (OS),3 items (Specialization), 3 items (Connectivity), 3 items (Network ubiquity), 8 items (Service innovation) based on five point likert scale from strongly disagree (1) to strongly agree (5). Some items pertaining to service improvement and suggestions were kept open ended to elicit free response.

Stage III: Final Data Collection

Census method was followed in contacting 96 top and middle level managers of 25 JKTD establishments. Two JKTD hotels located in Jammu division namely, Jia Pota Akhnoor and JKTD Chichi Mata were excluded as they were under construction. Due to militancy in Kashmir Division, JKTD Aharbal, JKTD Kokernag Resort and JKTD Manasbal Resort were omitted from the preview of survey. Tourist Bungalow Leh due to its renovation works was also excluded from the study. Of the total 96 JKTD managers, 28 are located in Jammu region and 68 in Kashmir province. The number of top managers contacted were 42 and middle level were 54 forming 43.7% and 56.25% in total. Monthly income wise 34 employees have earning between Rs.40000-Rs.60000 and 62 employees have earning of above Rs.60000 .Experience-wise, employee below 10 years are 19, 41(10 years-20 years) and 36 (20 years and above). The responses obtained were tabulated.

4 DATA ANALYSIS AND INTERPRETATION

IIC, RIC, EIC, EMC, DIC, CIC were second ordered constructs each consisting of 6, 2, 2, 3, 2 and 2 first ordered constructs respectively (Table1). The indicator with the loading values less than 0.4 were removed and a second iteration was carried out to have individual reliability values larger than the minimum threshold values of 0.4, AVE more than 0.50, rho value more than 0.4 and construct reliability value more than 0.4[4],[7]. Since each of the construct under the study was hierarchal and reflective in nature, latent scores were calculated using repeated indicator approach [10].In addition, three criteria: external validity, reflective outer weights and multi collinearity were used to validate reflective measurement models of SDL. Table 2 shows seven second-order reflective constructs are valid constructs and can be used to carry out further analysis.

SmartPLS3 was used to analyze the data and understand the relationship between the six foundational premised of SDL and service innovation (Table 3). The result show that DIC has the strongest total effect on SDL (0.750), followed by EIC(0.631), RIC (0.596), CIC (0.549), EMC(0.472) and IIC(0.471). SDL also leads to service innovation with loading of 0.156. The significance of the path co-efficient was tested by calculating t-statistics using non-parametric bootstrapping to provide confidence interval for all the parameter using 5000 bootstrap samples. Since the t statistics of all the structural relationship was more than 1.96 and P value was less than 0.05[9].So all the hypothesis were accepted stating that IIC, RIC, EIC, DIC , EMC and CIC leads to SDL and SDL leads to service innovation in the hotel industry.

To study the moderation effect of connectivity, network ubiquity, open standard and specialization on the relationship between SDL and service innovation, moderation analysis using product indicator approach was applied. A moderator variable influences the strength, or even the direction of the relationship between constructs in the structural model. The equation of the same can be written as equation 1

\[ \gamma_2 = c + b_1\gamma_1 + b_2 M + b_3 (\gamma_1 M) + \varepsilon \]  

(1)

where \(b_1\) is the coefficient related to the independent variable \(\gamma_1\), \(b_2\) to the outcome \(\gamma_2\) when \(M=0\), \(b_3\) is the coefficient relating to the moderator variable \(M\), to the outcome when \(\gamma_1=0, b_3\) is the estimate of the moderation effect(\(\gamma_1 M\)) \(c\) is the intercept of the equation and \(\varepsilon\) is the error term capturing the unexplained variance. If \(b_3\) is statistically different from zero, there is significant moderation in the \(\gamma_1 \cdot \gamma_2\) relation in the data. To test the possibility of such impact, SDL orientation (Predictor) and moderator are multiplied to create interaction variable to predict service innovation. The importance of moderation can be confirmed by analyzing if its interaction effect is meaningful.
and independent of the size of the path coefficient [9]. The significance of the path coefficient is tested by calculating t-values using bootstrap procedure which provide estimate of the shape, spread and bias of the sampling distribution of a specific static. Moderation effect is statistically significant if t-values are greater than the critical value (1.96) and p-values (probability value) smaller than 0.05 after applying bootstrapping. The strength of the moderating effect was assessed by comparing the proportional of variance explained on the main effect with the $R^2$ and $f^2$ of the full model. The result Table 4 show that the connectivity has the strongest moderating effect ($f^2=0.211$) followed by open standards ($f^2=0.160$), specialization ($f^2=0.120$) and network ubiquity ($f^2=0.037$). Thus, the hypothesis, connectivity, specialization, network ubiquity, open standards moderates the relationship between SDL orientation and service innovation holds for all four constructs.

### Table 2

**Second-order reflective indicators external validity and VIF**

<table>
<thead>
<tr>
<th>Construct</th>
<th>IIC</th>
<th>RIC</th>
<th>EIC</th>
<th>DIC</th>
<th>EMC</th>
<th>CIC</th>
<th>SDL</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>IIC</td>
<td>1</td>
<td>0.097</td>
<td>0.240</td>
<td>0.394</td>
<td>0.065</td>
<td>0.166</td>
<td>0.671</td>
<td>1.143</td>
</tr>
<tr>
<td>RIC</td>
<td>0.097</td>
<td>1</td>
<td>0.360</td>
<td>0.177</td>
<td>0.168</td>
<td>0.045</td>
<td>0.673</td>
<td>1.212</td>
</tr>
<tr>
<td>EIC</td>
<td>0.240</td>
<td>0.360</td>
<td>1</td>
<td>0.240</td>
<td>0.107</td>
<td>0.180</td>
<td>0.774</td>
<td>1.259</td>
</tr>
<tr>
<td>DIC</td>
<td>0.394</td>
<td>0.394</td>
<td>0.240</td>
<td>1</td>
<td>0.343</td>
<td>0.842</td>
<td>0.739</td>
<td>1.938</td>
</tr>
<tr>
<td>EMC</td>
<td>0.065</td>
<td>0.168</td>
<td>0.107</td>
<td>0.343</td>
<td>1</td>
<td>0.165</td>
<td>0.826</td>
<td>1.082</td>
</tr>
<tr>
<td>CIC</td>
<td>0.166</td>
<td>0.045</td>
<td>0.180</td>
<td>0.842</td>
<td>0.165</td>
<td>1</td>
<td>0.792</td>
<td>1.730</td>
</tr>
<tr>
<td>SDL</td>
<td>0.671</td>
<td>0.673</td>
<td>0.774</td>
<td>0.739</td>
<td>0.826</td>
<td>0.792</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

### Table 3

**Path Coefficients of the Constructs**

<table>
<thead>
<tr>
<th>Construct</th>
<th>Original Sample</th>
<th>Sample Mean</th>
<th>Standard Deviation</th>
<th>T-Statistics</th>
<th>t Value</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>IIC</td>
<td>0.475</td>
<td>0.454</td>
<td>0.158</td>
<td>2.976</td>
<td>0.003</td>
<td>accepted</td>
</tr>
<tr>
<td>RIC</td>
<td>0.396</td>
<td>0.591</td>
<td>0.133</td>
<td>4.509</td>
<td>0.000</td>
<td>accepted</td>
</tr>
<tr>
<td>EIC</td>
<td>0.631</td>
<td>0.628</td>
<td>0.081</td>
<td>7.803</td>
<td>0.000</td>
<td>accepted</td>
</tr>
<tr>
<td>DIC</td>
<td>0.750</td>
<td>0.752</td>
<td>0.051</td>
<td>14.896</td>
<td>0.000</td>
<td>accepted</td>
</tr>
<tr>
<td>EMC</td>
<td>0.472</td>
<td>0.461</td>
<td>0.141</td>
<td>3.342</td>
<td>0.001</td>
<td>accepted</td>
</tr>
<tr>
<td>CIC</td>
<td>0.349</td>
<td>0.342</td>
<td>0.107</td>
<td>5.332</td>
<td>0.000</td>
<td>accepted</td>
</tr>
<tr>
<td>SDL</td>
<td>0.126</td>
<td>0.103</td>
<td>0.094</td>
<td>2.061</td>
<td>0.007</td>
<td>accepted</td>
</tr>
</tbody>
</table>

The study has enticed four moderators namely, connectivity, network ubiquity, open standards & specialization, moderates the relationship between SDL-Service innovation.

### Table 4

**Impact of Moderators on SDL-Service Innovation**

|Hypothesis| $b_1$| $b_2$| $b_3$| $b_4$| $b_5$| $b_6$| $R^2$| F SDL| $R^2$| F SDL*M| Decision |
|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--------|----------|
|Connectivity| 0.084| 0.312| 0.317| 0.008| 0.306| -    |    |    |    |    |        | accepted |
|Network Ubiquity| 0.311| 0.445| 0.282| 0.163| 0.033| 0.213| 0.317| 0.213| 0.213| 0.213|        | accepted |
|Main effect| 0.111| 0.218| 0.069| 0.017| 0.258| -    |    |    |    |    |        | accepted |
|SDL*OS-SI| 0.124| 0.318| 0.155| 0.092| 0.026| 0.102| 0.037| 0.037| 0.037| 0.037|        | accepted |
|Open Standards| 0.074| 0.415| 0.007| 0.124| -    |    |    |    |    |    |        | accepted |
|Main effect| 0.136| 0.514| 0.322| 0.259| 0.031| 0.272| 0.160| 0.160| 0.160| 0.160|        | accepted |
|Specialization| 0.084| 0.313| 0.097| 0.008| 0.105| -    |    |    |    |    |        | accepted |

Note: C-Connectivity, NU-network Ubiquity, OS-Open System, S-Specialization, SI-Service Innovation

5. MANAGERIAL IMPLICATIONS

Since of all the interaction capabilities, Developmental and Empowered interaction capability have a strong association with SDL, hotels should focus of regular capacity building programmes, regular training & skill enhancement sessions for their managers and the staff employed to ensure they are better equipped to handle demanding customers in varied scenarios. Efforts must be made to have a regular interaction session and team meeting to ensure elicitation of the problems faced by the managers & staff. This will give them a joint forum to exchange ideas for service innovation and understanding how others countered the problems at their hotel establishments. Since SDL and service innovation had a association with $R^2$ value of 15.6%, to instill service innovation in the process and procedures of the organizations, managers should recognize all the stakeholders of tourism & hospitality industry, identify their strengths & capabilities and develop a value network to drive service innovation [25].
6. CONCLUSION
The study concludes that managers working in the hospitality industry should focus on overall development of his employees and decentralization of the decision-making authority to empower him. An empowered employee equipped with the requisite skill set will make better decisions thereby ensuring better quality customer service and hence impacting brand building & customer loyalty. Along with this hospitality industry must strive towards building an integrated service ecosystem consisting of all stakeholders where information is openly disseminated to ensure optimal utilization of the available resources hence reducing cost & service failures, customer dissatisfaction and building of a sustainable business.

7. LIMITATION
The study was based on the perception of the managers working in government hospitality organization in Jammu and Kashmir where the procedures and innovation are monitored by the government & funding sanctioned. To get a better insight, the study can be extrapolated to the private hospitality organizations. The study is restricted to the perception of the managers only. To have a better understanding of the service ecosystem, perception of the other tourism stakeholders can be included.

REFERENCES
[22] Normann, R. , Reframing Business: When the Map Changes theLandscape, Chichester: Wiley,2001


