Chapter 5

Major Findings, Methodological, Theoretical and Managerial Implications, Limitations and Directions for Future Research and Conclusion

5.1. INTRODUCTION

The existing studies on the barriers and facilitators of innovation have done by the researchers are product specific and with internal perspective (that is referred as firm perspective) and a very few studies have conducted with customer perspective. This research focuses on the identification of factors that act as barriers and facilitators for service innovation from the perspective of internal (firm) and external (customers).

Followed by, on the measurement of service innovation, the majority of the measurement scales related to service innovation are uni-dimensional scale, where the service innovation is a multi-dimension one. Nevertheless, the studies have measured service innovation from the internal perspective and only limited studies that have considered service innovation from the external perspective.

Further, service innovation studies examined the effect of service innovation on both financial and non-financial perspective where there is dearth in literatures considering corporate reputation and WOM as an outcome variable. Though some studies independently estimated the effect, the combined effect was unexplained. Since studies specified innovation drive reputation and WOM, this study estimated the structural model by keeping corporate reputation as a mediating construct between service innovation and WOM. With this background, this study attempted to answer the following research questions:

1. What are the factors that affect service innovation internally (firms’ perspective) and externally (customer perspective)?
2. What are the typologies and their measures, of service innovation?
3. Is there difference in each typology of service innovation among service industries?

4. What is the effect of service innovation on customer-based non-financial result performance – WOM and Corporate Reputation? and,

5. Does corporate reputation mediates the relationship between service innovation and WOM?

This section initially, discusses on the major findings of the study that aimed to identify internal and external factors from both firms’ perspective and customer perspective that either act as a barrier/facilitator for service innovation. The findings on scale development process for Higher Education, Banking and Retail industry respectively. Secondly, the methodological, theoretical and managerial implication followed by limitations and directions for future research and finally the conclusion of the study.

5.2. MAJOR FINDINGS

5.2.1. BARRIERS AND FACILITATORS OF SERVICE INNOVATION

The barriers and facilitators affecting firms in performing service innovation activity and customers in adopting service innovation activity were identified through two different qualitative techniques namely, (a) focus group discussions with customers and (b) in-depth interview with top and middle level management of three service industries.

From the six focus group discussions (two for each industry), a total of 73 customers who have participated gave a total of 85 factors (that either act as barriers/facilitators for purchasing service innovations). In higher education industry, out of 32 factors, 15 major external factors and 17 internal factors were identified from the discussions among students. In banking industry, out of 26 factors, customers have stated 12 as external factors and remaining 14 as internal factors. In retailing, out of 27 total factors discussed, 15 were related to external factors and 12 were related to internal factors. After the factors were elicited from the focus group discussions for each industry, the consolidation was done by deleting the duplicate factors and/or factors with similar meaning and finally 41 factors were derived. Of the total 41 factors, 18 factors were termed as internal factors
and 23 factors were termed as external factors that act as barriers/facilitators for customers in adopting service innovations from service firms.

From the nine in-depth interviews (3 in-depth interviews for each industry), a total 153 factors were elicited from top and middle level management, among which 82 factors were classified as internal factors and 71 factors were classified as external factors. With respect to higher education industry, out of 64 factors, top level and middle level management stated 36 internal factors and 28 external factors. In banking industry, among 46 factors, customers stated 27 as internal factors and remaining 19 as external factors. In retailing, out of 43 factors discussed, 19 were related to internal factors and 24 were related to external factors. Once the factors were elicited from in-depth interview for each industry, a due care was taken for consolidation where the duplicate factors and/or factors with similar meaning were deleted to finally have 59 factors. Of the total 59 factors, 34 factors were termed as internal factors and 25 factors were termed as external factors for service firms that act as barriers or facilitators in performing service innovation activity.

Table 5.1: Classification table for factors affecting service innovation

<table>
<thead>
<tr>
<th>Firms' Perspective</th>
<th>Customer Perspective</th>
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<tbody>
<tr>
<td>Financial aspects</td>
<td>Purchasing power</td>
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<tr>
<td>Organization internal structure</td>
<td>Need for service</td>
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<tr>
<td>Employee Involvement</td>
<td>Internal Ability</td>
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<td>Firms’ ability</td>
<td>Experience factor</td>
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<td>Employer support</td>
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<tr>
<td>Nature of service</td>
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<tr>
<td>Government and politics</td>
<td>External Communication</td>
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<tr>
<td>External market</td>
<td>Rules and regulations</td>
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<tr>
<td>Understanding customer demand</td>
<td>Firm preference</td>
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<tr>
<td>Technology</td>
<td>External pressure</td>
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<tr>
<td>Supply chain</td>
<td>External finance</td>
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<tr>
<td>Environmental issues</td>
<td>Access to innovation</td>
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<td>External finance</td>
<td>Technology</td>
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The Table 5.1 lists the factors (internal and external) from both customer perspective and firm perspective and a classification table was created by grouping related factor together and providing them with a common factor name. For instance, the factor named financial aspects includes financial investment, cost involved like promotion, production and transportation cost. Similarly, the factor named organization internal structure includes top management support, peer pressure, workload, change of work process, multiple leadership, internal communication and framing strategies. All the other factors were derived based on the similar process of grouping the obtained factors.

5.2.2. SCALE DEVELOPMENT FOR SERVICE INNOVATION IN HIGHER EDUCATION INDUSTRY

The scale development process in this study was based on “integrated approach” where both qualitative and quantitative approaches were adopted. The qualitative approach involved: (a) literature review for identifying typologies that measure service innovation, (b) focus group discussions and in-depth interviews for item generation. The quantitative approach involved: (a) reliability and validity test through PCA, (b) unidimensionality test through CFA followed by, (c) nomological validity of developed service innovation scale on corporate reputation and WOM through variance based SEM. The study followed with testing mediation effect of corporate reputation between service innovation and WOM. Finally, the study ended by comparing each typologies of service innovation among three service industries.

The seven major service innovation typologies namely, product innovation, peripheral product innovation, process innovation, peripheral process innovation, organization innovation, strategic innovation and marketing innovation have been identified through existing literatures and the measures/items has been developed to measure each typology of service innovation related to the higher education industry.

The total number of codes generated during two focus group discussions for higher education industry was 161 and 124 codes was elicited from the conduct of in-depth interviews. Lastly, the codes generated through focus group discussions and in-depth
interviews were combined to get 285 codes in total. On deleting the duplications and merging the codes with similar meaning the final list of codes obtained for higher education was 90.

Based on 1st experts’ survey suggestion, the number of typologies was reduced from 12 to 7. The 8 typologies of product and process innovation were grouped together to form 4 typologies such as product innovation (major/core product), peripheral product (on combining product-line extension, supplementary product innovation and product improvement), process (major/core process) and peripheral process (on combining process-line extension, supplementary process innovation, process improvement). Further the typology named style change has been merged into organization typology and finally seven (7) major typologies (product innovation, peripheral product innovation, process innovation, peripheral process innovation, organization innovation, strategic innovation and marketing innovation) measuring service innovation had been considered for higher education industry.

The 1st experts’ opinion survey for higher education industry resulted in 87 codes. Of the 87 codes, the experts placed 4 codes in product innovation, 16 codes in peripheral product innovation, 8 codes in process innovation, 17 codes in peripheral process innovation, 23 codes in organization innovation, 11 codes in strategic innovation, and finally 8 codes in marketing innovation. With the survey from exert opinion-2, two new codes were added in product innovation whereas 6 codes were removed from peripheral product innovation, in process innovation typology one new codes were added by experts on the other hand codes for peripheral process innovation remained undeleted. Two codes were deleted from organizational innovation typology, for strategic innovation typology no codes were removed and it remained with 11 codes and for marketing innovation typology one code was removed to have finally seven codes. The total 90 codes obtained through item generation step in higher education industry were reduced to 87 codes in experts’ opinion-1 and 81 codes in experts’ opinion-2.

The quantitative study for item validation used two different sets of customers in order to perform PCA and CFA. In total 209 students registered their level of agreement for PCA and 263 students registered their level of agreement for CFA.
The major findings of study-1 are: The initial reliability through Cronbach’s Alpha values of the items under each typology varied from 0.756 to 0.929 (product innovation- 0.756, peripheral product innovation-0.860, process innovation-0.910, peripheral process innovation-0.926, organization innovation-0.929, strategic innovation-0.914, and marketing innovation-0.810).

With respect to the corrected item–total correlation values, the overall values for all the typologies ranged between 0.315 and 0.772 and for each typology the values ranged between 0.395 and 0.628 for product innovation, 0.488- 0.644 for peripheral product innovation, 0.559-0.772 for process innovation, 0.524-0.737 for peripheral process innovation, 0.448-0.717 for organization innovation, 0.560-0.722 for strategic innovation, and 0.315-0.670 for marketing innovation.

Regarding the KMO values, the value for product innovation was 0.730, peripheral product innovation was 0.864, process innovation was 0.906, peripheral process innovation was 0.924, organization innovation was 0.900 and 0.916 and 0.818 values for strategic and marketing innovation, respectively. It is found from the diagonal values of anti-image correlation values ranged from 0.677 to 0.800. By service innovation typology-wise for product innovation, 0.790 to 0.915 for peripheral product innovation, 0.870 to 0.932 for process innovation, 0.864 to 0.950 for peripheral process innovation, 0.838 to 0.949 for organization innovation, 0.891 to 0.949 for strategic innovation, and 0.746 to 0.884 for marketing innovation overall, the value ranged between 0.667 to 0.950.

The findings from the 2 iteration through PCA is as follows:

The items were selected base on factor loadings and TVE. Based on the factors loading values of 1st iteration, 6 items under product innovation with TVE - 45.427 per cent, 6 of 10 items with TVE - 55.457 per cent under peripheral product innovation, 9 items with TVE - 58.419 per cent under process innovation, 6 of 17 items with TVE - 61.312 per cent under peripheral process innovation, 5 of 21 items with TVE - 63.395 per cent under organization innovation, 11 items with TVE - 53.861 for strategic innovation and 6 of 7 items under marketing innovation typology with TVE- 47.803 per cent were retained.
With second iteration through PCA, all the items for each typology loaded above the threshold value (the factor loading value ranged between 0.570 and 0.791 for product innovation with 45.427 per cent TVE, 0.602 - 0.778 for peripheral product innovation with 46.872 per cent TVE, 0.645 - 0.834 for process innovation with 58.419 per cent TVE, 0.617 - 0.819 for peripheral process innovation with 51.656 per cent TVE, 0.558 - 0.796 for organization innovation with 50.956 per cent TVE, 0.629 - 0.808 for strategic innovation with 53.861 per cent TVE, and 0.616 - 0.826 for marketing innovation with 53.612 per cent TVE) and hence there were no items removed in this stage.

The reliability values of the typologies are ranged between 0.754 and 0.916. The final set of items for higher education after PCA were 49 items (product innovation - 6, peripheral product innovation - 6, process innovation - 9, peripheral process innovation - 6, organization innovation - 5, strategic innovation – 11 and marketing innovation - 6).

The findings from the 2 iteration through CFA are as follows:

Based on the factor loadings value, 3 out of 6 items under product innovation, 4 out of 6 items under peripheral product innovation, 9 and 6 items under process innovation and peripheral process innovation respectively, 4 out of 5 items under organization innovation typology, 11 items under strategic innovation and 4 of 6 items under marketing innovation typology were retained.

It is found the 3 items under product innovation, 4 items with peripheral product innovation, 8 items in process innovation and 5 items under peripheral process innovation have satisfied the threshold values and hence retained. Similarly, 4 items, 6 items and 4 items for organization, strategic and marketing respectively have obtained for further stages of scale development procedure. The total items to measure service innovation after CFA for higher education industry was 34 items (product innovation - 3, peripheral product innovation - 4, process innovation - 8, peripheral process innovation - 5, organization innovation - 4, strategic innovation - 6, and marketing innovation - 4)

The findings of measurement model fitness for service innovation described that (a) absolute measure like Chi-square value indicates accepted fit, RMSEA value specified good fit, RMR value suggest accepted fit and SRMR value indicates moderate fit,
whereas GFI value indicated that the model is not good fit. The absolute fit indices are accepted since the measurement model is fit with 4 out of 5 indices; (b) the incremental fit indices like CFI value suggests that the model is absolute fit, NFI value indicates accepted fit and TLI value indicated good fit. Thus, all the three fit indices were accepted to prove that the overall model is fit with incremental fit index; and (c) the parsimonious fit indices result indicates that except AGFI the other two indices such as PNFI and normed chi-square values shows good fit indicating that the model is fit with respect to parsimonious fit index.

The TVE, AVE and Cronbach alpha was checked to justify the final scale its reliability and validity test. It is found that all the typology recorded the TVE value above the cutoff (value TVE > 0.50). The Cronbach alpha values are in between 0.910 and 0.757 and are above the threshold value α > 0.70. The AVE value of product innovation- 0.506, peripheral product innovation-0.479, process innovation-0.532, peripheral process innovation-0.523, organization innovation-0.541, strategic innovation-0.512, and marketing innovation-0.538 are above the threshold value (AVE > 0.50) except peripheral product innovation.

In the *stage 1* of model testing, the obtained reliability value (Cronbach alpha) of typologies (LOC) measuring service innovation (HOC) ranged from 0.757 to 0.963. The Cronbach alpha value for the higher order construct service innovation was 0.963 and unidimensional constructs such as corporate reputation and WOM were 0.887 and 0.898, respectively and depicts the internal consistency among the items. Further, the composite reliability values for LOC, HOC and unidimensional constructs (the values for LOCs are product innovation - 0.867, peripheral product innovation - 0.846, process innovation - 0.922, peripheral process innovation -0.897, organization innovation -0.881, strategic innovation - 0.899 and market innovation - 0.885, the values for HOC is service innovation - 0.965 and constructs such as corporate reputation is 0.912 and WOM is 0.921) are well above the threshold value of 0.70 thereby ensuring construct and convergent validity.
The AVE values for each typology of service innovation (product innovation - 0.686, peripheral product innovation - 0.579, process innovation - 0.599, peripheral process innovation - 0.636, organization innovation - 0.651, strategic innovation - 0.600 and market innovation - 0.660, and the values for three endogenous constructs are service innovation - 0.457, corporate reputation – 0.599 and WOM – 0.662) are above the suggested cut-off 0.5 except the service innovation (HOC/2nd order construct) for which collinearity was checked.

It is found with collinearity for measurement model that between typologies of service innovation, the VIF values (product innovation is 2.441, peripheral product innovation is 2.217, peripheral process innovation is 3.001, organization innovation is 2.231, strategic innovation is 2.991 and marketing innovation is 2.376) are less than the threshold level (< 5) and no collinearity issue between the typologies of service innovation.

The discriminant validity of the HOC service innovation and dependent constructs such as corporate reputation and WOM was confirmed through the correlation values lesser than the square root of AVE. Thus the discriminant validity among items was also confirmed through cross loadings values.

It was found that the estimated path model results that all the typologies are statistically significant in measuring service innovation and when process innovation is improved then it has more impact on service innovation (β = 0.280) and it is highly significant compared to other typologies (t= 18.20). The next typology that has impact on service innovation is strategic innovation (β =0.209, t= 14.03), then follows peripheral process innovation (β =0.183, t= 14.79), organization (β =0.146, t= 10.80), marketing innovation (β =0.131, t= 10.83) peripheral product (β =0.117, t= 9.89) and finally product innovation (β =0.096, t= 9.61).

In the stage 2 of model testing, it is found that the R² value for the direct effect from service innovation to WOM (R² =0.316) indicate that service innovation shows 31.6 percent of variation in WOM. Similarly, service innovation explained 41.7 per cent (R² =0.417) of variation in corporate reputation. Both service innovation and corporate reputation together explained 51.0 per cent (R² =0.510) of the variation in WOM.
It is found from the path model values that the direct effect from service innovation to WOM in the absence of corporate reputation (mediating effect) is statistically significant ($\beta=0.562$, $t=5.614$) hence, $H1a$ is accepted. The effect from service innovation to corporate reputation path ($\beta=0.645$, $t=8.397$) is statistically significant and hypothesis $H2a$ is accepted. Further, there is a significant positive effect of corporate reputation on WOM ($\beta=0.576$, $t=4.545$) and thus $H3a$ is also accepted.

It is observed from the mediation analysis that, the direct effect between service innovation and WOM ($\beta=0.562$, $t=5.614$) is significant and when corporate reputation is introduced as the mediator, the value obtained ($\beta=0.190$, $t=1.358$) becomes insignificant indicating that corporate reputation mediate the relationship between service innovation and WOM and $H4a-Ma$ is accepted. Further, there is a change in $R^2$ from direct effect model ($R^2=0.316$) to indirect effect model ($R^2=0.510$) indicating that the indirect effect from SI through CR predict WOM better compared to SI predicting WOM.

By testing mediation effect through Sobel’s Aroian test, the calculated z score (4.0078) is greater than the significant limit 1.96 (0.05 level of significance) and further, the VAF value indicates that 66.16 per cent of variation in WOM is explained by both service innovation and corporate reputation where the value is between 20 – 70 indicating partial mediation and thus hypothesis $H4-Ma$ is partially accepted. Finally based on effect size calculation it was noted that though the direct effect from service innovation to WOM is not very strong (0.190), the total effect is comparatively better (0.5615), indicating the relevance of service innovation in explaining WOM.

5.2.3. SCALE DEVELOPMENT FOR SERVICE INNOVATION IN BANKING INDUSTRY

205 codes were elicited through the two focus group discussions and 119 codes were obtained through In-depth interviews in banking industry. The codes generated through in-depth interview and focus group discussions were combined to get 324 codes. On deleting the duplications the final list of codes were 120.
Similar to higher education industry, based on the survey of 1st experts’ suggestion, the number of typologies was reduced from 12 to 7 and finally seven typologies namely, product innovation, peripheral product innovation, process innovation, peripheral process innovation, organization innovation, strategic innovation and marketing innovation were taken for scale development process.

The experts (in 1st experts’ opinion survey) suggested in deletion of irrelevant codes to finally have 99 codes among which 9 codes were placed in product innovation, 11 codes in peripheral product innovation, 6 codes in process innovation, 25 codes in peripheral process innovation, 21 codes in organization innovation, 15 codes in strategic innovation, and finally, 12 codes in marketing innovation.

In experts’ opinion-2, 3 new codes were added in product innovation, 4 codes were removed from peripheral product innovation, 3 new codes were added in process innovation and 1 code was deleted from peripheral process innovation. Similarly, 6 codes under organizational innovation, 4 from strategic and 3 from marketing innovation typology were deleted. The total 120 codes obtained through item generation step were reduced to 99 codes in experts’ opinion-1 and 87 codes in experts’ opinion-2.

Two different set of customers were approached for study 1 - item validation stage and study 2 - unidimensionality test where, in total 208 customers responded in for study 1 and 252 customers responded for study 2.

The major findings of study 1 are: (a) the initial reliability through Cronbach’s alpha values varied from 0.846 to 0.941 (product innovation- 0.888, peripheral product innovation-0.846, process innovation-0.897, peripheral process innovation-0.941, organization innovation-0.912, strategic innovation-0.889, and marketing innovation-0.897); (b) The item-total item correlation values ranged between 0.380 and 0.732 and the item–total correlation values for each typology ranged between 0.422 and 0.655 for product innovation, 0.472 and 0.680 for peripheral product innovation, 0.596 and 0.732 for process innovation, 0.420 and 0.725 for peripheral process innovation, 0.380 and 0.722 for organization innovation, 0.432 and 0.703 for strategic innovation, and 0.596 and 0.715 for marketing innovation; and (c) The KMO values for product innovation was
0.903, peripheral product innovation was 0.879, process innovation was 0.881, peripheral process innovation was 0.928, organization innovation was 0.910, strategic innovation was 0.883, and marketing innovation was 0.901 and (d) The diagonal values of anti-image correlation values ranged between 0.860 to 0.932 for product innovation, 0.858 to 0.912 for peripheral product innovation, 0.856 to 0.908 for process innovation, 0.864 to 0.959 for peripheral process innovation, 0.832 to 0.955 for organization innovation, 0.849 to 0.917 and 0.833 to 0.932 for strategic and marketing innovation respectively. Overall the value ranged between 0.832 to 0.959.

The finding from the 2 iteration through PCA is as follows:

Based on the factor loadings, 7 items under product innovation, 7 items under peripheral product innovation, 9 items under process innovation, 8 items under peripheral process innovation, 6 items under organization innovation typology, 5 items and 9 items under strategic innovation and marketing innovation were retained.

With the PCA’s 2nd iteration, 7 items under product innovation with 46.994 per cent TVE, 7 items under peripheral product innovation with 52.376 per cent TVE and for process innovation 9 items with 54.849 per cent TVE, for peripheral process innovation 8 items with 42.20 per cent TVE, for organization innovation 6 items with 50.613 per cent TVE were retained. Similarly, 3 items under strategic innovation and 9 items under marketing innovation typology were retained with 65.090 per cent and 55.059 per cent TVE respectively. The reliability values of the typologies ranged between 0.731 and 0.897. The final set of items for banking industry after PCA were 49 items (product innovation - 7, peripheral product innovation - 7, process innovation-9, peripheral process innovation-8, organization innovation-6, strategic innovation – 3 and marketing innovation-9).

The findings from the 2 iteration through CFA for unidimentionality are as follows:

Based on iteration 1, it is found that 1 item from product innovation, 4 items from peripheral process innovation and 1 item from organization innovation were removed. All the 7 items under peripheral product innovation, 9 items under process innovation, 3 items under strategic innovation and 9 items under marketing innovation were retained.
In the iteration 2 through CFA, 3 items under product innovation, 6 items under peripheral product innovation, 8 items under process innovation, 3 items under peripheral process innovation, organization innovation and strategic innovation were retained respectively. Finally in marketing innovation typology 7 items were retained. The total number of items to measure service innovation after CFA for banking industry was 33 items (product innovation- 03, peripheral product innovation-06, process innovation- 08, peripheral process innovation- 03, organization innovation- 03, strategic innovation- 03, and marketing innovation- 07).

The findings of measurement model fitness for service innovation typologies in banking industry described that, (a) in absolute model fitness the chi-square value is within three times the df and hence it is acceptable fit, the RMSEA value indicated that model is “good fit”, the obtained value of RMR and SRMR indicated acceptable and moderate fit respectively, whereas the GFI value indicated the model shows poor fit; (b) the incremental fit index values specified that CFI shows absolute fit, TLI indicates acceptable fit and NFI specifies good fit; and (c) the Parsimonious fit index results indicated that except AGFI the other two PNFI and normed chi-square was accepted to indicate that the model is good fit.

Finally the TVE, AVE and Cronbach alpha was checked to justify the final scale’s reliability and validity. All the typology recorded the TVE value above the cutoff value (TVE > 0.50). Similarly, the AVE value of all the typologies are above the threshold value (AVE > 0.50) except the construct peripheral product innovation (AVE =0.4715) and the Cronbach alpha values for the typologies ranged between 0.692 and 0.889 which is above the threshold value (α > 0.60) indicating the scale’s reliability and validity.

In stage 1 of the model testing, the Cronbach’s alpha of service innovation typologies in banking industry ranged from 0.614 to 0.883, the value for service innovation was 0.883, and the values for the other two constructs such as corporate reputation and WOM were 0.787 and 0.821 respectively. The composite reliability values ranging from 0.738 to 0.898 (the values for LOCs are product innovation - 0.755, peripheral product innovation - 0.738, process innovation - 0.786 , peripheral process innovation -0.760 , organization innovation -0.815, strategic innovation - 0.821 and market innovation - 0.852, the values
for HOC service innovation is 0.898 and the values for corporate reputation is 0.846 and WOM is 0.870) which are well above the threshold value thereby ensuring construct and convergent validity.

The AVE values for each typology of service innovation (product innovation - 0.507, peripheral product innovation - 0.528, process innovation - 0.521, peripheral process innovation -0.517, organization innovation -0.596, strategic innovation - 0.606 and market innovation - 0.453) and the values for three endogenous constructs such as service innovation -0.330, corporate reputation – 0.552 and WOM – 0.630 were also above the proposed cut-off except marketing innovation typology and the service innovation (HOC). Since the measurement model is formative collinearity needed to be verified for HOC.

It was found with the collinearity for measurement model that the VIF value for product innovation is 1.204, peripheral product innovation is 1.496, peripheral process innovation is 1.938, organization innovation is 1.701, strategic innovation is 2.041 and marketing innovation is 1.459 are less than the threshold level (< 5)and no collinearity issue between the typologies of service innovation in banking industry.

The discriminant validity of service innovation, corporate reputation and WOM is confirmed since the square root of AVE of a construct is greater than the correlation values of that construct with other constructs. Similarly, the discriminant validity with respect to items measuring the service innovation typology is confirmed through cross loadings values.

The findings of the estimated measurement model indicate that marketing innovation has more impact on predicting service innovation ($\beta = 0.353, t= 7.153$) and it is highly significant compared to other typologies. The next typology that has impact on service innovation is process innovation ($\beta =0.242, t= 5.030$), then follows peripheral product innovation ($\beta =0.195, t= 5.937$), strategic ($\beta =0.191, t= 7.376$), organization innovation ($\beta =0.168, t= 7.435$) peripheral process innovation ($\beta =0.154, t= 8.500$) and finally product innovation ($\beta =0.076, t= 2.537$).
In the *stage 2* of the structural model testing it is found that, The $R^2$ value obtained in direct effect states that service innovation explains 38.6 per cent ($R^2 = 0.386$) and 55.5 percent ($R^2 = 0.555$) of variation in WOM and corporate reputation respectively. The direct effect from corporate reputation to WOM indicates that corporate reputation explains 37.8 per cent ($R^2 = 0.378$) of variation in WOM. Finally, both service innovation and corporate reputation together explains 43.8 per cent ($R^2 = 0.438$) of the variation in WOM.

It is found from the path coefficient values that the direct effect from service innovation to WOM in the absence of corporate reputation (mediating effect) is statistically significant ($\beta=0.620$, $t=6.715$) hence, *H1b is accepted*. Similarly, the path from service innovation to corporate reputation ($\beta=0.745$, $t=13.200$) is highly significant and hypothesis *H2bis accepted*. Further, there is a significant positive direct effect of corporate reputation on WOM ($\beta=0.615$, $t=7.620$) and thus *H3b is also accepted*.

It is found from the mediation analysis that the corporate reputation partially acts as a mediating variable. That is the direct effect from service innovation to WOM ($\beta=0.620$, $t=7.329$) is significant and when corporate reputation is introduced as the mediator, the value obtained ($\beta=0.365$, $t=2.484$) remains significant. Thus, the path from mediator (corporate reputation) to the dependant variable (WOM) was verified where, the direct effect of corporate reputation on WOM is ($\beta=0.615$, $t=7.504$)statistically significant and the significant value of corporate reputation to word-of mouth is reduced (from $t=7.504$ to $t=2.475$) in the mediation analysis and *H4- Mb is partially accepted* which was further noted based on the change in $R^2$ from direct effect model ($R^2 =0.386$) to indirect effect model ($R^2 =0.438$).

Through Sobel’s Aroian test for mediation, the obtained $z$ score (6.735) is greater than the significant limit 1.96 (at 0.05 level of significance) and the calculated VAF value indicates that 55.65 per cent of variation in WOM is explained by both service innovation and corporate reputation thus, *hypothesis H4-Mb is partially accepted*. Finally, the effect size calculation test noted that though the direct effect from service innovation to WOM is not very strong (0.365), the total effect is comparatively better (0.823), indicating the relevance of service innovation in explaining WOM through corporate reputation.
5.2.4. SCALE DEVELOPMENT FOR SERVICE INNOVATION IN RETAIL INDUSTRY

Similar to higher education and banking industry, for the third service industry retailing, this research study adopted seven major typologies specified in earlier service innovation literature. The total number of codes elicited during two focus groups was 174 and the total number of codes encrypted through in-depth interview was 155. On combining the codes generated through focus group discussions and in-depth interview was 329. On deleting the duplications, the final list of codes obtained was with 123 codes.

Based on experts’ suggestion, similar to other two industries the number of typologies for retailing was also reduced from 12 to 7. The number of codes reduced by the experts were 108 from 123, where, 8 codes were placed in product innovation, 9 codes in peripheral product innovation, 9 codes in process innovation, 16 codes in peripheral process innovation, 27 codes in organization innovation, 21 codes in strategic innovation, and finally 18 codes in marketing innovation. In exerts’ opinion - 2, 1 code was deleted in product innovation whereas 2 codes were removed from peripheral product innovation, in process innovation typology 1 new code were added by the experts on the other hand, 1 code was deleted under peripheral process innovation. All the codes in organizational innovation remained unchanged. The strategic innovation had 1 new code added whereas there was no code included or deleted under marketing innovation typology. The total 123 codes obtained through item generation step were reduced to 108 codes in experts’ opinion - 1 and 106 codes in experts’ opinion - 2.

In quantitative approach, a total of 211 customers responded for study 1 and 258 customers responded for study 2. The major findings of the study 1 are: (a) the initial reliability through Cronbach’s Alpha values where the values varied from 0.722 to 0.914 (product innovation- 0.748, peripheral product innovation-0.722, process innovation-0.807, peripheral process innovation-0.819, organization innovation-0.911, strategic innovation- 0.910 and marketing innovation- 0.914), (b) the corrected item –total correlation values ranged between 0.305 to 0.637 (the values ranged between 0.372 and 0.571 for product innovation, 0.354 and 0.518 for peripheral product innovation, 0.349 and 0.637 for process innovation, 0.305 and 0.585 for peripheral process innovation,
0.381 and 0.601 for organization innovation, 0.361 and 0.623 for strategic innovation, and 0.525 and 0.614 for marketing innovation), (c) the KMO values for product innovation was 0.801, peripheral product innovation was 0.757, process innovation was 0.824, peripheral process innovation was 0.834, organization innovation was 0.890, strategic innovation was 0.897, and marketing innovation was 0.919, and (d) the diagonal values of anti-image correlation values ranged from 0.764 to 0.876 for product innovation, 0.718 to 0.794 for peripheral product innovation, 0.707 to 0.889 for process innovation, 0.740 to 0.887 for peripheral process innovation, 0.803 to 0.938 for organization innovation, 0.828 to 0.931 for strategic innovation, and 0.885 to 0.954 for marketing innovation. Overall, the value ranged between 0.707 to 0.954 which is above cut-off value.

The findings from the 2 iterations through PCA are as follows: The items were selected based on the factor loadings where in 1st iteration, 6 items under product innovation, 5 items under peripheral product innovation, 7 items under process innovation, 10 items under peripheral process innovation, 10 items under organization innovation and 8 items and 5 items under strategic innovation and marketing innovation respectively were retained for further stages of scale development procedure. With second iteration through PCA, all the 6 items under product innovation typology with 41.612 per cent TVE, 4 items under peripheral product innovation with 44.249 per cent TVE, 6 items under process innovation typology with 46.121 per cent TVE and 6 items under peripheral process innovation with 47.798 per cent TVE were retained. Similarly, 7 items under organization innovation with 41.929 per cent TVE, 6 items under strategic innovation with 43.223 per cent TVE, and finally all the 5 items under marketing innovation with 49.606 per cent TVE were retained for further analysis. The reliability values ranged between 0.703 and 0.779. The final set of items to measure service innovation typologies for retail sector after PCA was 40 items.

It is found from the 1st iteration through CFA is that, 3 items under product innovation, peripheral product innovation and process innovation were retained respectively. In peripheral process innovation all the 6 were retained whereas 4 items under organization innovation items were retained. With respect to strategic innovation and marketing innovation, 3 items under each typology were retained.
The findings of measurement model fitness for service innovation typologies in retail industry indicate that for absolute measures the chi-square value is two times the df and hence it is acceptable fit, the RMSEA value indicated the model is good fit, the RMR and SRMR values describe that the model is acceptable and moderate fit respectively on the other hand, the GFI shows a poor fit and thus, the result indicates that the measurement model is fit with 4 out of 5 indices and hence the absolute fit index is accepted. Under incremental fit index, the CFI value indicates the model as good fit, the NFI value signifies acceptable fit and TLI value suggest the model is good fit and hence the overall model is fit with incremental fit index. For Parsimonious fit index, except AGFI the other two PNFI and normed chi-square is accepted to indicate that the model is fit with respect to parsimonious fit index. Further, it was observed from the result that (a) the TVE values, (b) the Cronbach Alpha values and the AVE values of the typologies of service innovation in retailing were above the threshold value.

In stage 1 of the structural model testing, The Cronbach alpha values of typologies (LOC – lower order constructs) measuring service innovation (HOC- higher order construct) ranged from 0.669 to 0.912, the Cronbach alpha values for the higher order construct(service innovation) was 0.912, and unidimensional constructs such as corporate reputation and WOM was 0.826 and 0.850 respectively. The composite reliability values LOCs such as product innovation was 0.832, peripheral product innovation was 0.733, process innovation was 0.795, peripheral process innovation was 0.887, organization innovation was 0.800, strategic innovation was 0.877 and market innovation was 0.778, the values for service innovation (HOC) was 0.924, and for corporate reputation and WOM was 0.888 and 0.870, respectively.

The AVE values for each typology of service innovation are product innovation - 0.626, peripheral product innovation - 0.484, process innovation - 0.568, peripheral process innovation -0.569, organization innovation -0.501, strategic innovation - 0.706 and market innovation - 0.547, and the values for three endogenous constructs are service innovation -0.339, corporate reputation – 0.529 and WOM – 0.572. The AVE values of the typologies are above the proposed cut-off 0.5 except the peripheral product innovation, similarly, AVE for service innovation (HOC/2\textsuperscript{nd} order construct) is low, for
which collinearity needed to be tested. The collinearity for measurement model indicate that the obtained VIF values are lesser than the threshold limit(< 5)and no collinearity issue between the typologies of service innovation in retail industry. Based on Fornell and Larcker method, the discriminant validity of service innovation, corporate reputation and WOM is ensured, since the square root of AVE of a construct is greater than the correlation values of that construct with other constructs. The discriminant validity of the items measuring service innovation typologies was ensured by verifying the cross loadings values.

It was found that similar to higher education industry and banking industry all the service innovation typology in retail industry have an impact in predicting corporate reputation and WOM construct. The result highlights that when peripheral process innovation is improved then it has more impact on service innovation and it is highly significant. The next typology that has impact on service innovation in retailing is strategic innovation ($\beta = 0.216$, $t = 10.679$), then follows organization innovation ($\beta = 0.193$, $t = 7.654$), product innovation ($\beta = 0.162$, $t = 6.646$), marketing innovation ($\beta = 0.160$, $t = 7.111$), process innovation ($\beta = 0.133$, $t = 5.935$) and finally peripheral product innovation ($\beta = 0.114$, $t = 5.152$).

In stage 2 of the structural model testing, it is found that service innovation directly explains 28.9 per cent ($R^2 = 0.289$) and 30.1 percent ($0.301$) of variation in WOM and corporate reputation respectively. Corporate reputation explains 40.5 per cent ($R^2 = 0.405$) variation in WOM. Finally, both service innovation and corporate reputation together explains 45.5 per cent ($R^2 = 0.455$) of the variation in WOM. It is observed from the path model that the direct effect from service innovation to WOM in the absence of corporate reputation is statistically significant ($\beta = 0.537$, $t = 6.765$) hence, $H1c$ is accepted. Similarly, the path from service innovation to corporate reputation ($\beta = 0.548$, $t = 7.109$) is statistically significant and hypothesis $H2c$ is accepted. Further there is a significant positive effect of corporate reputation on WOM ($\beta = 0.636$, $t = 9.396$) and thus, $H3c$ is also accepted.

It was noted from the mediation analysis through bootstrapping method is that, the direct effect from service innovation to WOM ($\beta = 0.537$, $t = 6.765$) is significant and when corporate reputation is introduced as the mediator, the value obtained ($\beta = 0.269$, $t = 2.44$) is
still significant. Thus the path from mediator to the dependant variable is verified where, the direct effect of corporate reputation on WOM is ($\beta=0.636$, $t=9.396$) statistically significant and the significant value of corporate reputation to word-of-mouth is reduced (from $t=9.396$ to $t=4.478$) in the mediation analysis and hence indicating that corporate reputation partially mediate the relationship between service innovation and WOM thereby $H4$- $Mb$ is partially accepted. Further there is a change in $R^2$ from direct effect model ($R^2 = 0.289$) to indirect effect model ($R^2 = 0.455$). The Sobel’s Aroian test for mediation resulted in z-score (3.814) is greater than the significant limit 1.96 (at 0.05 level of significance). The calculated VAF value indicates that 49.81 per cent of variation in WOM is explained by both service innovation and corporate reputation where the value is between 20 – 70 thereby there is a partial mediation effect and thus hypothesis $H4$- $Mc$ is partially accepted. Finally, the effect size calculation indicates that although the direct effect from service innovation to WOM is not very strong (0.269), the total effect is comparatively better (0.536), indicating the relevance of service innovation in explaining WOM.

5.2.5. COMPARATIVE STUDY

The findings on comparative study reveals that, compared to other two industries retail industry’s product innovation ($\bar{x}=3.62$), peripherals product innovation ($\bar{x}=3.73$), organization innovation ($\bar{x}=3.75$) and marketing innovation ($\bar{x}=3.64$) determining reputation and WOM is high. On the other hand, customers in banking industry noted the typologies such as process innovation ($\bar{x}=3.69$) and strategic innovation ($\bar{x}=3.54$) is comparatively higher in determining reputation and positive WOM. Customers of all the three industry gave a similar level of agreement for peripheral process innovation typology ($\rho=.710$). Overall the mean scores of the level of agreement varied between 3 to 4 noting that, customer agree that the seven typologies of service innovation are important in determining reputation and positive WOM. Thus, except H5d, all other hypotheses such as H5a, H5b, H5c, H5e, H5f, and H5g are accepted. The Table 5.2 lists the research questions of the study followed by respective objective and relevant propositions and hypotheses framed. The table ends with the results on acceptance/not-acceptance of the hypotheses.
<table>
<thead>
<tr>
<th>Research Questions</th>
<th>Objectives</th>
<th>Proposition/Hypothesis</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>What are the factors that affect service innovation internally (firm perspective) and externally (customer perspective)?</td>
<td>To identify and classify the factor that affects service innovation from the perspective of firm;</td>
<td>Factors (internal/external) affecting service innovations are different from that of product innovation.</td>
<td>Factors identified are similar but suitable factor names provided exclusively for service firms</td>
</tr>
<tr>
<td></td>
<td>To identify and classify the factor that affects service innovation from the perspective of customer;</td>
<td>There are factors (internal/external) which affect customer acceptance of service innovation.</td>
<td>Identified and classified</td>
</tr>
<tr>
<td></td>
<td></td>
<td>There are additional factors (internal/external) which affect service innovation activity of the firm</td>
<td>Additional factors identified</td>
</tr>
<tr>
<td>What are the typologies and their measures, of service innovation?</td>
<td>To develop and validate items for measuring the typologies of service innovation for three different services industries – Higher education, Banking and Retailing;</td>
<td>Product innovation, Peripheral product innovation, Process innovation, Peripheral process innovation, Organization innovation, Strategic innovation and Marketing innovation, together, have an impact on predicting firms’ service innovation activity.</td>
<td>Typologies together affect Service innovation activity of the firm</td>
</tr>
<tr>
<td>What is the effect of service innovation on customer-based non-financial result performance – WOM and Corporate Reputation?</td>
<td>To study the effect of service innovation on WOM;</td>
<td>H1a: Service innovation has a positive effect on WOM in the higher education industry.</td>
<td>Accepted</td>
</tr>
<tr>
<td></td>
<td></td>
<td>H1b: Service innovation has a positive effect on WOM in the banking industry.</td>
<td>Accepted</td>
</tr>
<tr>
<td></td>
<td></td>
<td>H1c: Service innovation has an effect on WOM in the retail industry.</td>
<td>Accepted</td>
</tr>
<tr>
<td></td>
<td>To study the effect of service innovation on corporate reputation;</td>
<td>H2a: Service innovation has a positive effect on corporate reputation in the higher education industry.</td>
<td>Accepted</td>
</tr>
<tr>
<td></td>
<td></td>
<td>H2b: Service innovation has a positive effect on corporate reputation in the banking industry.</td>
<td>Accepted</td>
</tr>
<tr>
<td></td>
<td></td>
<td>H2c: Service innovation has a positive effect on corporate reputation in the retail industry.</td>
<td>Accepted</td>
</tr>
<tr>
<td></td>
<td>To study the effect of corporate reputation on WOM;</td>
<td>H3a: Corporate reputation has a positive effect on WOM in higher education industry.</td>
<td>Accepted</td>
</tr>
<tr>
<td>Contd..</td>
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</table>

Table 5.2: Research questions, objectives and acceptance of proposed hypotheses in the study
<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>H3b</strong></td>
<td>Corporate reputation has a positive effect on WOM in banking industry.</td>
</tr>
<tr>
<td><strong>H3c</strong></td>
<td>Corporate reputation has a positive effect on WOM in retail industry.</td>
</tr>
<tr>
<td><strong>H4-Ma</strong></td>
<td>Corporate reputation mediates the relationship between service innovation and WOM in the higher education industry.</td>
</tr>
<tr>
<td><strong>H4-Mb</strong></td>
<td>Corporate reputation mediated the relationship between service innovation and WOM in the banking industry.</td>
</tr>
<tr>
<td><strong>H4-Mc</strong></td>
<td>Corporate reputation mediated the relationship between service innovation and WOM in the retail industry.</td>
</tr>
<tr>
<td><strong>H5a</strong></td>
<td>There are differences among product innovation typologies in predicting corporate reputation and positive word</td>
</tr>
<tr>
<td><strong>H5b</strong></td>
<td>There are differences among peripheral product innovation typologies in predicting corporate reputation and positive word</td>
</tr>
<tr>
<td><strong>H5c</strong></td>
<td>There are differences among process innovation typologies in predicting corporate reputation and positive word</td>
</tr>
<tr>
<td><strong>H5d</strong></td>
<td>There are differences among peripheral process innovation typologies in predicting corporate reputation and positive word</td>
</tr>
<tr>
<td><strong>H5e</strong></td>
<td>There are differences among organization innovation typologies in predicting corporate reputation and positive word</td>
</tr>
<tr>
<td><strong>H5f</strong></td>
<td>There are differences among strategic innovation typologies in predicting corporate reputation and positive word</td>
</tr>
<tr>
<td><strong>H5g</strong></td>
<td>There are differences among marketing innovation typologies in predicting corporate reputation and positive word</td>
</tr>
</tbody>
</table>
5.3. IMPLICATIONS

5.3.1. METHODOLOGICAL IMPLICATIONS

The qualitative and the quantitative research approaches adopted in this study resulted in a list of various methodological implications that would help future researchers in conducting the research. The methodological implication starts with the factors that act as barriers or facilitators for service innovation from both firm and customer perspective identified through qualitative study and the scale developed to measure service innovation typologies through qualitative and quantitative study.

The factors were identified based on the literature review; text analysis process (through TDM matrix and word cloud) helped the researcher in this study to identify the research problem, where the word cloud clearly differentiated the less concentrated areas in service innovation literatures. Future researchers can adopt the text analysis process to evaluate the frequency of concepts and theories studied in existing theoretical or empirical literatures.

The scale development process adopted in this study is based on ‘integrated design’ approach thereby suggesting future researchers that is in order to develop a new theory or a new construct researchers can explore clear idea about the construct from various dimensions qualitatively and quantify them using quantitative approaches.

One of the major methodological finding that would help the researchers using qualitative approach related to sample size determination is that, in qualitative study it is better to concentrate on how in-depth a researcher conducts a discussion among participants or interview with expert(s) rather than the breadth in terms of sample size. Through the literature review, the research study suggests that items from two different qualitative studies can be combined.
In scale development, the major methodological finding is that in order to perform PCA and CFA two different sets of respondents are needed. Though earlier scale development literatures did not considered CFA as an essential step, in this study CFA technique is performed as it ensures and enhances the confidence in psychometric and structural properties of newly developed scales. Rather than using PLS based SEM to test the unidimensionality of the scale, researchers can use CB-SEM since it focuses on reproducing the theoretical covariance matrix and produces goodness of fit, that is difference between observed and expected covariance matrix. This research study suggest the researcher to check for collinearity rather than convergent validity and discriminant validity for formatively measured construct, since the constructs are distinct from one another AVE is usually low because the constructs won’t converge.

The item wise discriminant validity through cross loading values helps to prove how each items show higher loading with its respective construct compared to other irrelevant constructs and the discriminant validity among constructs using Fornell and Lanker method helps in showing the differentiation among the constructs used in the study thereby suggesting that using two approaches would help in determining discriminant validity accurately.

Using variance based SEM (PLS-SEM/ Partial Least Squares) for nomological validity is advisable since the method helps in maximizing the variance explained by independent variables on one or more dependant variable. Further, when the model is reflective-formatively measured then, this research study recommends “two stages approach” proposed by Ringle et al (2012) and Hair et al (2014).

5.3.2. THEORETICAL IMPLICATIONS

The findings on the internal and external factors affecting service innovation from firms’ perspective theoretically fill the prevailing gap and the future research can adopt these factors and test their effects on the performance of service firms and prioritize the major factor. The customer perspective factors presents a new scope to the researchers on understand the role of factors that act as barriers/facilitators for customers in purchasing the service innovations.
The industry specific measures developed for service innovation typologies was an attempt to fill the gap in the existing service innovation literatures that stressed on the need for measurement scale exclusively for service industries from the customer perspective. Since in this research study the measurement scale for service innovation typologies are developed based on the synthesis approach (including both technological and non-technological aspects), service marketing academicians and researchers can adopt the industry specific measures to examine the relationship between service innovation and its outcome variables rather than relying on existing scales which are either product based or scales that measure financial performance (internal perspective) or scales that are unidimentional with dichotomous rating type.

Further, similar to other non-financial outcome variables such as purchase intention, cross-buying behaviour, satisfaction and loyalty the variables taken in this study such as WOM and corporate reputation is strongly associated with service innovation thereby the results strengthen the existing service innovation based literatures. The study also provides an insight on the combined effect of service innovation and corporate reputation on WOM through the mediation effect of corporate reputation. Further, existing theoretical observations (Chun 2006 and Luoma-aho 2007) of the path from service innovation to customer non-financial performance through corporate reputation (as a mediator) is extended by empirically proving through this study. The findings of this study is in line with the observation of the earlier works of Snoj et al (2007) who observer that innovation and reputation resources mix can contribute to a competitive advantage through financial and non-financial performances. The mediation test helps to understand the role of the construct corporate reputation in explaining the relationship between service innovation and WOM where the result might help the researchers to understand that corporate reputation partially mediated the relationship thereby service innovation directly affects WOM even in the absence of the construct corporate reputation. The results on $R^2$ values signifies the service innovation and corporate reputation researchers that there is increase in the total variation from before mediation effect and after mediation effect, thereby indicating that service innovation together with corporate reputation predicts WOM better compared to the direct effects.
5.3.3. MANAGERIAL IMPLICATIONS

Through the analysis of service industry specific identification of internal and external factor from both firm perspective and customer perspective would help the decision makers/managers of the service firms to understand the major factors that act as barriers or facilitators for a firm to bring service innovation and customers purchasing the service thereby the firms can take effort on controlling the effect of the barrier and can easily market the service products to target customers. That is, if the barriers are taken care through tactic and strategic decisions, then it facilitates the service firms in bringing service innovations. For instance, if the decision makers of the service firm allocate proper funding for service innovation activity that would helps the employees to convert their idea into practice within short time period. Multiple ideas emerge since there is a financial support from the firm, and the managers must take a note that if an idea that they think as the best one fails, they need to concentrate on a new idea that succeeds the existing failure rather than dropping the idea. Even though service innovation is risky, managers must understand that taking risk would facilitate firms in bring multiple creativity that gives a competitive advantage and makes the firm to sustain in the competitive market. A proper care needed to be take on internal structure of the service firms like training the employees, supporting their ideas, reducing their work pressure and proper flow of control thereby motivating the employees to involve in handling the problems in a novel way.

Further, the manager/decision maker must make sure that there is proper resource that facilitates the process of creating service innovations like installing updated technological/non-technological tools, physical resources, safety and security to the employees thereby creating an environment that would make their employees to think differently which results in new ideas. Since services are different from products, the characteristics of services like perishability, inseparability, intangibility needed to be given proper attention because it would affect the customer of a service firm to a greater extent compared to product based firms. For instance, in retail store cold storage facility is needed for perishable products, if that service is not offered the customers tend to not choose the store in buying the perishable products like milk or meat thereby store losing
customers who frequently purchase such products. Similarly, offering video conferencing classes would facilitate the students who could not visit the college where the institution can conduct the course at the same time for students who visit and those who could not visit the college thereby the institution can save time and money in conducting the course.

The firm specific internal factors can be controlled by decision makers and managers of the firm by taking precautions for barriers and focusing on facilitating factors to provide better service to existing customers and attracting new customers. On the other hand, it is difficult for the service firm to control the external factors and hence the decision makers need to think on suitable solutions like open innovation, MOUs and collaborations. Further, the service firms can go for incremental innovations like line extension, providing supplementary service, development of existing services to show differentiation. Collaborations with appropriate partner in the market can overcome technology barrier, supply chain barrier and external finance barrier. The service firms can go for the co-creation of services with customers thereby customer based barrier can be minimized. External sources like government needed to consider the difficulties of a service firm and need to modify the existing rules and regulations to an extent thereby not affecting the service firm in bring new services. Imitation is one of the major issue faced by the service firm since their best ideas are copied easily, copyrights for a certain period can be provided by government agencies so that the barrier can be overcome. Environmental issues is one of the barriers observed in this study which was not earlier discussed in the earlier literatures, though natural calamities like floods and snowfall is unavoidable, firms need to be cautious and take preventive measures like installing latest preventing equipments, training staff on safeguarding measures needed to be taken during difficult situations etc.

Understand customer based barrier and overcoming would further facilitate the firm since ultimately the service innovation is introduced to satisfy the customers’ demand. This study identified certain internal and external barriers of the customers thereby the managers can consider these barriers and take necessary measures to overcome them. One of the major internal barriers for customers is purchasing power that is the cost of the
service is the major issue that acts as a barrier for customers in purchasing a service innovation. Service firms can take measures on bringing a cost efficient service innovation or can vary the price of the service based on need of the customer (like price of the movie ticket where additional charge for additional services).

Co-creation, training the customer on accessing the service innovation and creating awareness would be the possible solutions on minimizing the need barrier. Customer need for the service varies and there need a proper awareness about the service, further the service firms must come forward in understanding the customer needs and create the service along with the customer and offer them with proper training would easily satisfy the customer need. Earlier literature has stressed that the acceptance of service innovation is significantly high if the service innovation is from reputed firm, further quality of service, trust on the firm, satisfaction with earlier service innovation would affect the current purchase behaviour of the customer and thus service firms need to take care on these aspects to overcome the experience factor.

There are certain external factors that affect customers in purchasing service innovation from a firm like external communication where the WOM from relatives and friends would affect their decision making, by bringing frequent innovation and attracting the customers creates positive attitude towards the brand and thereby customers involve in giving positive WOM about the service firm. Service firms can frame the policies that help the customer in easy access on purchasing and/or using the service innovations would encourage them in preferring the service provider, for example, higher educational institution by extending the timing of library access during examination would favor students in accessing the facility. In case of inability of bringing service innovations firms can go for open innovation where collaboration with IT/non-IT for sharing technology/non-technology services facilitate the existing customers and can attract new customers. The following factor that acts as a barrier is the external finance, where the service firms can think on arrangement of bank loans, paying in installments would reduce the customers’ pressure on onetime payment. Thus decision makers/managers can consider these suggestions on overcoming the barriers both internally and externally in
order to attain customer satisfaction thereby leading to long term financial/non-financial success of the firm.

Further, this study developed scales to measure service innovation typologies for three industries: higher education, banking and retailing, where the developed service innovation industry specific scale helps the service marketing academics as well as decision maker/managers of the service industry to adopt the scale and measure service innovation in their institute/bank/retail store thereby based on the customers’ opinion the organization can sort out the typology they need to concentrate to improve and enhance overall financial/non-financial performance. The findings of the study reveals that service innovation is the combination of all the typologies (product, peripheral product, process, peripheral process, organization, strategic and marketing) where there is a significant effect of these typologies on service innovation noting to the decision makers and the managers that service innovation need not be radical or disruptive or only technological in nature, an new changes/improvement in the existing concepts, process of delivery, or changes within the organization, new strategic decision and even it can be a new way in marketing their service.

That is, a firm is said to be innovative if they bring any type of service (might be existing in the market) that is new to its customers. For example, with respect to higher educational institution, decision makers can understand that any new service concept like integrated programmes, new courses, digital books and/or change in the process of delivery - smart class rooms, online courses, flexible class timings and/or organization changes like attractive infrastructure, having champions as faculties, modification in internal structure and/or strategic decisions like quality improvement, collaborations with industries or other innovative colleges for resource or knowledge sharing, involvement in social activities and/or changes in distribution process, innovative pricing of services, promotions through social media would attract all the stakeholders especially the parents and students. When these service innovations are attractive and valuable to the parents and students, they continuously avail the higher education services and recommend to their family members and friends thereby the higher educational institution(s) gain
competitive advantage which is resulted in this study through nomological validity testing.

Through nomological validity results the decision makers/managers can note that service innovation positively influences corporate reputation and positive WOM. That is, when firms introduce service innovation activities that would eventually attract customers thereby the service firms gain reputation in the market and if the firm is reputed in the market customers of the firm would tend to give positive WOM. The service providers need to focus on the integration of service innovation and building corporate reputation (also brand reputation) to improve and enhance positive WOM among customers thereby resulting in long-term performance. Firm, which is faster in its innovation experiences provide financial and/or non-financial outcomes such as profitability, enhanced reputation, or strategic advantage (Howell 2005). Further, the results highlights the combined effect of service innovation-corporate reputation on the WOM is much higher than that of the direct effect of service innovation on WOM. Reputed firms need to innovate in order to sustain in the market and vice-versa. The major or minor innovation makes a firm as reputed in the market. Based on the mediation analysis results, it is understood that even when service innovation is introduced by non-reputed firm the customer gives positive WOM thereby reputation only partially mediated the relationship between service innovation and WOM with respect to banking and retailing industry, whereas higher education institution which gains positive WOM is because they are well reputed in the market.

The managers of firms can understand that even when they are new to the market if their service innovation is attractive and radical in the market, eventually customer talk positively about the service and the firm, when they bring frequent service innovations that would make them reputed in the market and further introduction of service innovation that ultimately contributes more towards the non-financial performance namely WOM. In this study scales are developed for three service industries namely higher education, banking and retailing where the comparative results indicate that there is difference among industries for each typology except peripheral process innovation thereby giving an insight to the decision makers/managers of the industry that customer
prefer certain typology as important in predicting the outcome variable compared to other typology where the firm can pay more attention to the respective typology thereby attaining the non-financial outcome variable could be better.

5.4. LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH

The following paragraph details the limitations of this study, which is the scope for future research.

This research has identified the major internal and external factors affecting both organization in bringing service innovation and customers in accepting service innovation from the firm but not empirically tested where the future research can be on empirical study of these set of identified factors of service innovation and prioritize the factors. The study developed industry specific scale to measure service innovation, the future research can adopt and test the scale in different geographic locations since literature (Yeniyurt and Townsend 2003) has stated that service innovation is moderated by cultural aspects. Only one industry from each classification by Lovelock et al (2004) is taken in this study, where industry specific scales can be developed for other industries in the classification.

This study initially attempted to develop scale for healthcare industry but, difficulties arose during focus group discussions and during data collection for quantitative studies. Since, the customers for health care industry were patients; they were unwilling to fill the questionnaire and were difficult for the researcher in getting unbiased response thereby the scope for future researchers can be to specifically concentrate on healthcare industry and develop a scale to measure service innovation in that industry.

An attempt can be made to generalize the scale on the measurement of service innovation. Earlier researchers have stated that there is the possibility of reciprocal relationship between service innovation and corporate reputation (Chen 2008; Henard and Dacin 2010) and corporate reputation and WOM (Hansen et al 2008). An attempt can be made to test the reciprocal relationship and determine which construct is highly significant in driving the other. This study in order to test the nomological validity considered corporate reputation and WOM as a dependant variable, future researchers
can consider other outcome variables like service quality, purchase intention, satisfaction, loyalty and check the effect of the developed scale to measure service innovation.

There are additional limitations that are associated with the research design that is, there might be existence of common method variance (Straub et al 1995). Thus, the reliability analysis can be improved by applying longitudinal analysis among various adopter groups. It is also suggested to adopt other methodology for future research to discover powerful variables that might help to explain better prediction of the model. The explanatory power of the independent variables such as: (a) service innovation and (b) corporate reputation on WOM for higher education industry was 51.0 per cent ($R^2 =0.510$), 43.8 per cent ($R^2 =0.438$), 45.5 per cent ($R^2 =0.455$) for banking and retailing respectively, when new variables are identified the explanatory power can be improved. In this regard, moderating variable can also be used and further the combined mediation and moderation effects can also be studied.

5.5. CONCLUSIONS

The study adopted both qualitative and quantitative approaches to answer the major objectives. To explore the major factors affecting service innovation from firm and customer perspective, qualitative approaches like focus group discussions and in-depth interviews were conducted.

The study resulted in 13 major factors that act as a barrier or facilitator for firms in bringing innovation among which 6 factors were classified as internal and 7 factors were classified as external factors. In addition, 11 factors were identified as factors that act as barriers/facilitators for customers in purchasing service innovation among which 4 factors were classified as internal factors and 7 factors were classified as external factors. The identification of both internal and external factors helps the researchers and decision makers of the service firm to concentrate on specific factors thereby helping the firm in bringing service innovation frequently in addition measures can be taken to make customers in purchasing their service innovation. The study concludes by noting that when the service firms concentrate on these major internal and external factors that would facilitate the firms internally to perform frequent innovative activity and helps
externally in retaining their existing customers and in attracting new customers thereby gaining competitive advantages and achieving both financial and non-financial performances.

To develop and validate the service innovation scale, “integrated approach” was adopted where items were generated and purified using qualitative approaches and the purified items were validated using quantitative approach. The scale development for service innovation from customer perspective in three industries such as higher education, banking and retailing fills the gap in the service innovation literature on need for measurement scales. The results on scale validations indicate that all the seven typologies taken in this research study has a positive impact on determining service innovation irrespective of the industry in which it is developed and validated. Thereby, concluding that the scales can be adopted by future researchers and managers of the service firms in measuring the service innovations from customer perspective. The research study further propose a gap for future researcher where common items can be taken from three industries thereby a generalized scale to measure service innovation across service industries can developed.

Measures developed for service innovation typologies are compared to understand the similarities and differences in each typology among the industries where the result indicated that except peripheral process innovation typology all other typologies are significantly different among industries. That is, the findings indicate that though the seven typologies determine service innovation, the customers’ level of agreement towards each typology differ among the industries. Thus, the industry specific scale can be adopted by the respective service firm to measure service innovation and understand the customers’ preference towards the respective typology. On identifying the major typologies, managers can concentrate and introduce service innovation in that specific typology frequently. Further, the comparative study provides scope for the future researchers in developing common measures for service innovation and its typologies across service industries.

The nomological validity was tested to estimate the effect of the developed measures of service innovation typologies on corporate reputation and WOM. The result concludes
that there is a positive significant association among service innovation, corporate reputation and WOM. That is the result signifies that when a service firm brings frequent innovation that would enhance the reputation of the firm in the marker and would help the firm in attaining positive WOM from customers to their relatives and friends thereby a long term non-financial performance is attained. In addition the study result justifies that reputed companies get positive WOM. The result helps service marketing academics, researchers and decision makers in understanding that when service firms bring service innovation in the market frequently that would make the firm reputed in the market and enhances WOM among customers positively.

The final objective was to estimate the mediation effect of corporate reputation between service innovation and WOM. That is, to understand whether the direct effect of service innovation on WOM is significant because of the presence of reputation. The result on mediation analysis indicates that corporate reputation fully mediated the relationship between service innovation and WOM with respect to higher education industry and partially mediated the relationship with respect to banking and retail industry. From the result it can be suggested to future researchers and decision makers of service firms that positive WOM about service innovation in education institution is based on their reputation level. That is, when a reputed institution brings new programmes/new method of teaching, it gets positive WOM from the students rather than the institution, which is new to the market. Thus new higher education institution needs to first attain reputation by bringing frequent service innovation in order to gain positive WOM, which is not in the case of the banking or retailing industry.

With respect to banking and retailing, if a non-reputed bank or a retailer introduces the service innovation, it still gets positive WOM from the customer. That is, when a service firm (bank/retail store) though they are new to the market when they attempt to frequently brings service innovations that would directly result in positive word-of-mouth where reputation plays a partial role. Further, based on the result it can be concluded that compared to the independent effect of service innovation and corporate reputation on WOM, service innovation together with corporate reputation has more effect on positive WOM.