

PUBLIC SECTOR  
SERVICE VALUE CHAIN  
LINKING EMPLOYEE ENGAGEMENT &  
CUSTOMER SATISFACTION

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## EXECUTIVE SUMMARY

The *Public Sector Service Value Chain* model is gaining attention from all levels of government in Canada as a key approach to building citizen trust and confidence in public institutions. The model proposes that higher employee engagement in public sector organizations translates into more satisfied customers, and ultimately, greater trust and confidence in public institutions (Heinzman and Marson, 2006). More research is needed however, to test the proposed set of linkages that form this model. This present study aims to do so by empirically investigating the first link of the service value chain: the two-way relationship between employee engagement (i.e., satisfaction and commitment) and customer satisfaction.

Employee engagement results were paired with customer satisfaction feedback across 41 work units in the BC Public Service and Region of Peel, Ontario, who participated in both employee and customer surveys between 2005 and 2007. BC Stats explored how the engagement of employees in work units directly involved in service delivery contributes to the first link of the service value chain. The results of the analyses are summarized according to two key questions.

### 1. What is the relationship between employee engagement and customer satisfaction?

**Finding 1** There is a moderately strong positive two-way relationship between employee engagement (i.e., satisfaction and commitment) and customer satisfaction ( $r = .467$ ). That is, as employee engagement increases so does customer satisfaction, and vice versa. The relationship between employees and their customers is mutually reinforcing. In other words, if scores decrease in one area, we can expect to see a decrease in the other area as well.

**Finding 2** On average, work units with high employee engagement scored 11 points higher in customer satisfaction than work units with low engagement (69 versus 80 out of 100 points).

### 2. What impact does employee engagement have on customer satisfaction?

**Finding 1** Employees' engagement levels impact the satisfaction of services they provide to their customers. For every two-point increase in employee engagement, we can expect a one-point improvement in customer satisfaction.

**Finding 2** In this study, employee engagement is an important driver of customer satisfaction. Overall, approximately 20% of the variation or differences in customer satisfaction scores can be explained by changes in employee engagement scores.



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## 1. INTRODUCTION

### 1.1 Objective

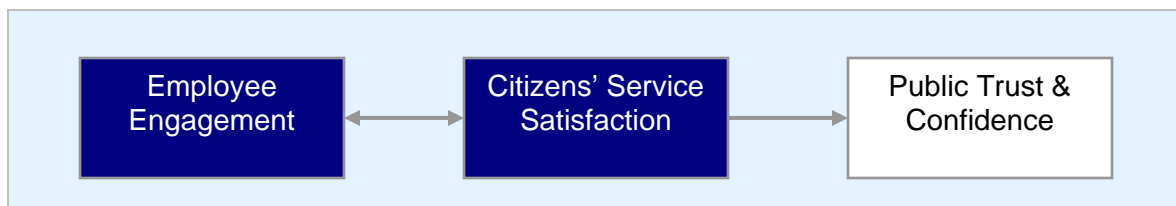
In the private sector, research shows that companies with higher employee engagement translates into better services and/or products, more satisfied customers, and ultimately, higher profits. These relationships are described as the *Service Profit Chain* (Heskett et al., 1994).

Heintzman and Marson (2006) propose a similar set of linkages for the public sector, but with public trust and confidence as the bottom line instead of profit, since the success of government is related to the trust and confidence that citizens have in their public institutions.

***Public trust and confidence is our 'bottom line.'***

Using public trust and confidence as the government's bottom line, a public sector version of the service profit chain is proposed to describe the linkages between employee engagement, citizens' service satisfaction and public trust and confidence. Heintzman and Marson (2006) refer to these linkages as the *Public Sector Service Value Chain* (Figure 1).

Figure 1. The Public Sector Service Value Chain



The link between citizens' satisfaction with government services and their trust and confidence in government has been established in *Citizens First 3* (2003). However, to date little research has tested the two-way link proposed to exist between citizens' service satisfaction and employee engagement. Part of this is due to a limited amount of data available in the public sector to enable such a study to occur. Through the mutual involvement of the Canadian inter-government research group, BC Stats and Region of Peel began a partnership which allowed BC Stats to test this link by examining work unit data collected by both jurisdictions.

This report demonstrates how the engagement of employees from public sector work units directly involved in service delivery contributes to the service value chain. Employees' engagement, in other words, their satisfaction and commitment (Spears, 2006; Schmidt, 2004) is explored alongside the satisfaction of those who accessed or received their services— their customers. The findings are summarized according to two key research questions.

### 1.2 Key Questions

- 1) What is the relationship between employee engagement and customer satisfaction?
- 2) What impact does employee engagement have on customer satisfaction?

For more information about the research methodology please refer to Appendix A.

## 2. KEY FINDINGS

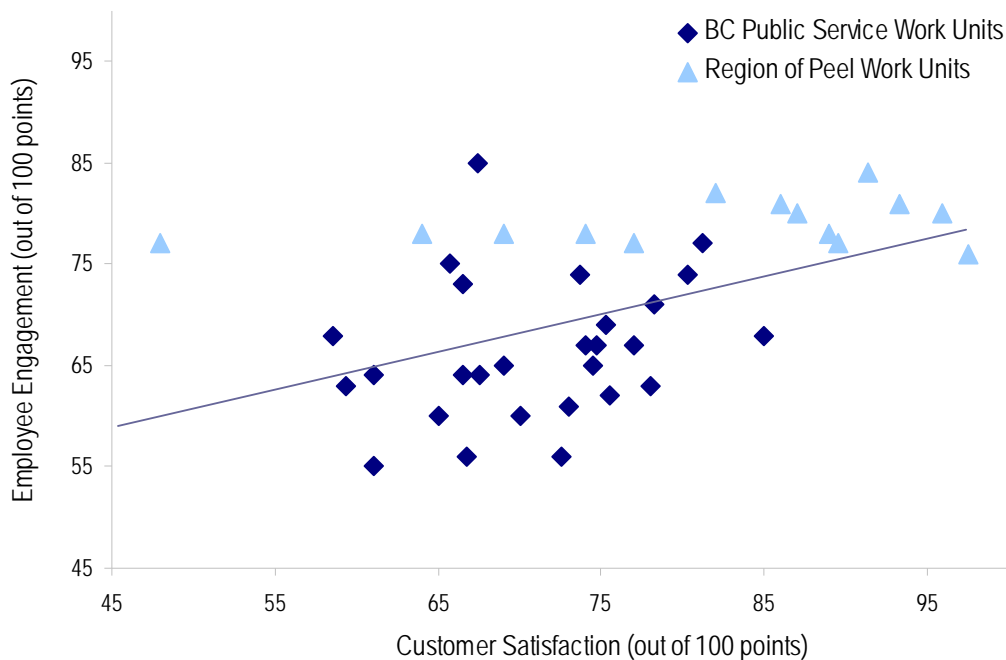
### 2.1 What is the relationship between employee engagement and customer satisfaction?

#### Exploring the Link

Employee engagement and customer satisfaction levels were analyzed using 41 public sector work units directly involved with service delivery, including 27 from the BC Public Service and 14 from the Region of Peel.<sup>1</sup> Work unit employee engagement scores ranged from 55 to 85 points, averaging at 71 out of 100 points. Customer satisfaction scores across work units were more diverse, ranging from 48 to 98 points, averaging at 75 out of 100 points.

Correlation analysis on the two sets of work unit data demonstrated a moderately strong two-way relationship between employee engagement and customer satisfaction.<sup>2</sup> In *Figure 2*, the employee engagement scores for all work units are plotted with their customer satisfaction scores. The corresponding trend line shows that in work units where employee engagement is higher, so is customer satisfaction, and vice versa. Likewise, in work units where employee engagement is lower, so is customer satisfaction, and vice versa.

*Figure 2. As employee engagement increases so do customer satisfaction scores, and vice versa.*



The above findings support Heintzman and Marson's (2006) proposal of a two-way link between employee engagement and customer satisfaction.

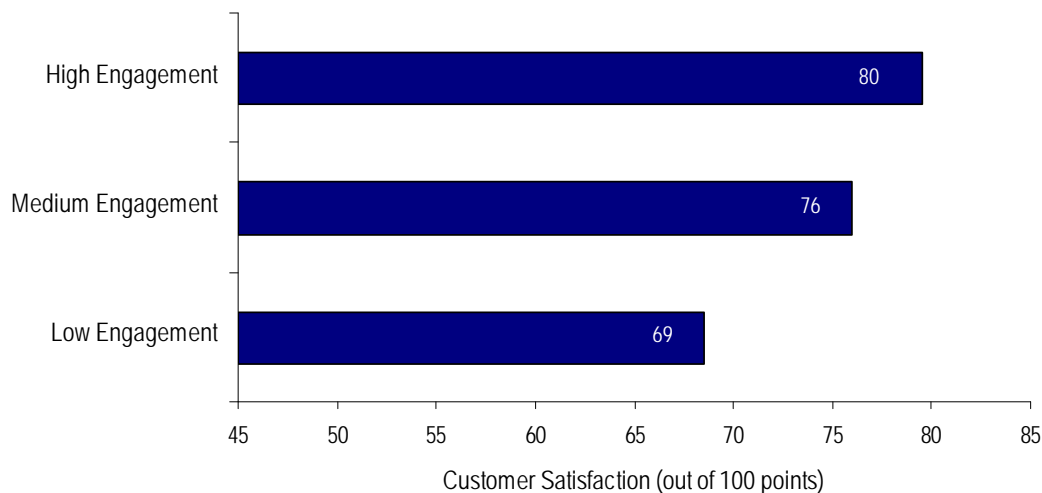
<sup>1</sup>Under jurisdictional partnership, BC Stats and the Region of Peel combined their respective data to increase and diversify the sample, which enhanced the power of the statistical tests deployed as well as the generalisability of the findings. See Appendix A for a detailed description of employee engagement and customer satisfaction measures used for both organizations.

<sup>2</sup> Pearson Correlation Coefficient = 0.467,  $p < .002$  (two-tailed).

## Uncovering the Differences

The 41 work units were divided into three types of groups based on the distribution of their engagement scores.<sup>3</sup> Analysis revealed differences in customer satisfaction between these groups of work units. Work units classified as ‘Low Engagement’ averaged 69 out of 100 points on customer satisfaction. Work units classified as ‘Medium Engagement’ performed better in customer satisfaction, with an average score of 76 out of 100 points. Work units with ‘High Engagement’ achieved the highest scores averaging at 80 out of 100 points.

*Figure 3. Work units with high employee engagement scores had significantly higher customer satisfaction scores.*



Looking at *Figure 3*, the differences between groups are evident. As employee engagement increases by group, there is an improvement in the perceived quality of services these work units provide to their customers. More importantly, a clear and statistically significant difference in customer satisfaction levels (11 points) is observed between work units with high and low employee engagement.<sup>4</sup>

***There is a clear and significant difference in customer satisfaction levels between higher and lower engaged work units.***

<sup>3</sup> The groups are based on the percentile ranking of scores. ‘Low Engagement’ represents work unit scores that fall within the 33<sup>rd</sup> percentile (65 points and lower). ‘Medium Engagement’ represents work units with scores ranging from 66-76 points. ‘High Engagement’ represents work units where scores were on the 66<sup>th</sup> percentile and above (equalling 77 points and higher).

<sup>4</sup> A one-way ANOVA was deployed to test whether differences in customer satisfaction were statistically significant from the low engagement group to the high engagement group. Analysis revealed a statistical difference at the 0.02 probability level of significance.

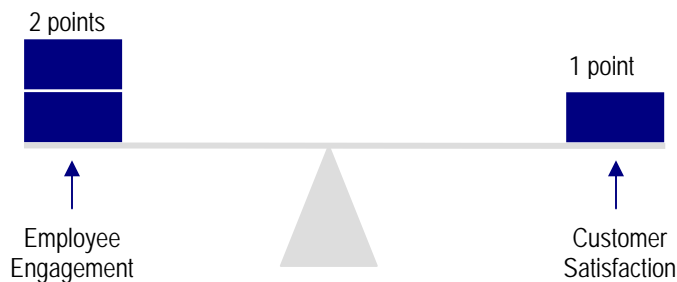
## 2.2 What impact does employee engagement have on customer satisfaction?

Knowing that customer satisfaction will increase when employee engagement increases is useful information, but it is not complete. By adding the predictive capability to measure how much customer satisfaction will improve when employee engagement increases creates a much more robust piece of business intelligence crucial for strategic planning.

Customer satisfaction is dependent on the engagement level of work units providing these services. Regression analysis found that engagement scores accounted for 20% of the differences in customer satisfaction scores from the work units.<sup>5</sup> In general, customer satisfaction scores improved by 1 point when employee engagement increased by approximately 2 points (see Figure 4).<sup>6</sup>

**For every 2 point increase in employee engagement, customer satisfaction increased 1 point.**

Figure 4. Increasing employee engagement leads to improvements in customer satisfaction.



Findings collectively support the employee-customer link proposed in *the Public Sector Service Value Chain*. In keeping with the two-way relationship found in the earlier section, how engaged (i.e., satisfied and committed) employees are in any given work unit can be both impacted and reinforced by the way customers view the quality of services the work unit provides.

<sup>5</sup> A linear regression yielded a standardized beta coefficient of 0.467 and an adjusted squared correlation ( $R^2$ ) of 0.198, significant at the 0.002 probability level.

<sup>6</sup> Caution should be taken when generalizing the results beyond this study due to small sample size and research design limitations.

### 3. LIMITATIONS

Limitations in this study arise out of the availability of data. The sample size of work units (41) is large enough for statistical significance, but too small to break up into demographic segments within those 41 work units. A larger sample size would allow for the use of control variables such as size of work unit, location, and what level/type of service they provide (i.e. frontline, administrative, etc). Future analysis should factor in the wide variation of employees that exist across work units.

A second limitation in this study arises out of the inconsistency of indicators of engagement from different jurisdictions. Although BC Stats and the Region of Peel combined their respective data sets to increase and diversify the sample, consistency in measurement was lost. The set of engagement and customer satisfaction measures in BC are different from those in the Region of Peel. BC Stats feels while there are differences, the data are consistent enough for the purpose of this preliminary analysis. Further work should replicate this study using more consistent measures of engagement. See Appendix A for a break down of engagement and satisfaction measures for the BC Public Service and the Region of Peel.

### 4. NEXT STEPS

This study was designed to be a preliminary inquiry into the *Public Sector Service Value Chain*, specifically dealing with the first link in the chain: the two-way relationship between employee engagement and customer satisfaction. This study does validate the link and demonstrates the impact that engagement has upon customer satisfaction in a public sector context.

Moving forward, a deeper analysis of the first link of *Public Sector Service Value Chain* needs to be undertaken to more reliably confirm and understand the benefits underlying this linkage.

Below are some specific suggestions. These next steps include:

1. Replicate this study with more consistent measures of engagement while controlling for work unit size.
2. Build upon the database of match pairs so that sample size can be increased to enhance validity.
3. Introduce control variables (e.g., location, ministry, etc.) to the model to account for demographic differences between work units.
4. Link the *Common Measurement Tool* customer satisfaction drivers, level of service, service type and engagement measures to test and create a robust model that explains variance in customer satisfaction.
5. Identify and implement a consistent set of service attributes that are essential for all forms of public sector services.
6. Investigate or build upon other areas feeding into the *Public Sector Service Value Chain* (e.g., aspects of program policy, development, direction and delivery).

## APPENDIX A — METHODOLOGY

### 5. RESEARCH DESIGN

In partnership with the Region of Peel, BC Stats studied the relationship between employee engagement and customer satisfaction at the work unit level. In total, 41 work units were used in the study, 27 from the BC public Service and 14 from the Region of Peel. Data pairs were selected and matched from employee engagement and satisfaction surveys conducted between 2005 and 2007.

The matching of employee and customer data was based on the following criteria:

1. The engagement and customer satisfaction score had to be collected in the same calendar year for each work unit.
2. The scope defining the work unit had to be identical for both the employees and services customers were evaluating. In other words, scores from employees who provided service x, had to align with customers who received service x.
3. Customer satisfaction data had to be based on an overall summary question about the satisfaction of services provided, for example: “Overall, how satisfied are you with service x?”
4. Customer satisfaction and engagement questions were scaled on a 5-point bipolar scale anchored by the following qualifier at each end: Very Dissatisfied/Strongly Disagree and Very Satisfied/Strongly Agree.

The quality of the match of employee and customer data was more important to the validity of results than the total number of work units. Thus, every effort was made to ensure only data that sufficiently met the above criteria was included in the analyses.

### 6. SAMPLE CHARACTERISTICS

The BC Public Service data was based on 5 different provincial ministries (Transportation, Labour & Citizen’s Services, Environment, Agriculture & Lands, and Attorney General). The ministry work units varied from 10 to 265 employees, with an average work unit size of 64 employees.<sup>7</sup>

The Region of Peel’s data was based on seven municipal divisions (Peel Living, Children’s Services, Ontario Works, Transhelp, Peel Long Term Care, and Waste Management). The size of the work units making up these divisions varied from 65 to 302 employees, with an average work unit size of 152 employees.<sup>8</sup>

The work units from the BC Public Service combined with the Region of Peel provided a wide range of services in the sample, ranging from waste management to legal services. BC Stats feels that this level of diversification further enhances the validity of the study.

<sup>7</sup> Total based on the total number of employees who completed the survey.

<sup>8</sup> Total based on the total number of employees who completed the survey.

## 7. ENGAGEMENT AND SATISFACTION MEASURES

Three characteristics of engagement are used in the BC Public Service: job satisfaction, organization satisfaction and commitment. For the Region of Peel, BC Stats selected the two characteristics of engagement that were more on par with the BC Public Service measures of engagement: commitment and job satisfaction. While some of the questions that make up the engagement variables may differ between the BC Public Service and the Region of Peel, BC Stats believes that engagement scores are sufficiently comparable between the two for the purpose of this study.<sup>9</sup>

The list below outlines the measures that make up the characteristics of employee engagement as well as the customer satisfaction questions used for this study.

BC Public Service	Region of Peel
<b>Characteristics of Employee Engagement</b>	
<p><i>(1) Job Satisfaction:</i></p> <ul style="list-style-type: none"> <li>I am satisfied with my job.</li> </ul> <p><i>(2) Organization Satisfaction:</i></p> <ul style="list-style-type: none"> <li>I am satisfied with my ministry/organization.</li> </ul> <p><i>(3) Commitment:</i></p> <ul style="list-style-type: none"> <li>I would prefer to stay with the BC Public Service, even if offered a similar job elsewhere.</li> <li>Overall, I am satisfied in my work as a BC Public Service employee.</li> </ul>	<p><i>(1) Job Satisfaction:</i></p> <ul style="list-style-type: none"> <li>Taking everything into account, how satisfied are you with your present job at Region of Peel?</li> <li>I enjoy my work.</li> <li>My job makes good use of my skills and abilities.</li> </ul> <p><i>(2) Commitment:</i></p> <ul style="list-style-type: none"> <li>I am proud to work for the Region of Peel.</li> <li>If a close friend were looking for employment, I would recommend Peel.</li> <li>I am willing to put in a great deal of effort to help the region of peel succeed.</li> </ul>
<b>Overall Customer Satisfaction Measures</b>	
Overall, how satisfied are you <service name>?	How satisfied were you with the overall quality of service delivery?

<sup>9</sup> A third characteristic of engagement exists for the Region of Peel. The characteristic is referred to as the "Quality of Work Life." The questions making up this characteristic were not sufficiently comparable to BC Stats measures and therefore were excluded from the analyses.

## 8. DATA ANALYSIS

The response scale for both customer satisfaction and employee engagement questions were based on a five-point scale, which ranged from '1' to '5'. To calculate scores needed for the analysis, the original responses were recoded into new values based on a '0' to '100' point scale.

Original 5-point response scale	New values out of 100 points
1 - Very Dissatisfied/Strongly Disagree	0
2	25
3	50
4	75
5 - Very Satisfied/Strongly Agree	100

Using these new values, an average score was calculated for each engagement characteristic. If an engagement characteristic had more than one question, then scores on questions for the characteristic were averaged together. The overall engagement scores for the BC Public Service work units were calculated by averaging the three characteristics of engagement, while the overall engagement scores for the Region of Peel work units were produced by averaging the two characteristics of engagement. A Pearson correlation (R) assessed the relationship between engagement and customer satisfaction scores.

A one-way analysis of variance (ANOVA) was used to determine the statistical difference in scores between the three types of engagement groups. The engagement classification of work units was based on how their score ranked with others in the entire distribution. 'Low Engagement' represents work unit scores that fall within the 33rd percentile (65 points and lower). 'Medium Engagement' represents work units with scores ranging from 66-76 points. 'High Engagement' represents work units where scores were on the 66th percentile and above (77 points and higher). The cut-offs for each group is based solely on the percentile ranking of scores in the distribution.

A linear regression examined how much customer satisfaction would increase when employee engagement was increased by one unit of measure. Adjusted square correlations ( $R^2$ ) further determined how much variance in customer satisfaction could be attributed to changes in employee engagement.

Statistical significance for all tests was based on the 0.05 probability level of significance.

**APPENDIX B — REFERENCES**

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