Quantitative Constructs of the Packaged Software Services Industry

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Abstract: Packaged software services has been constantly expanding and forms major part of the IT services industry. These services are provided by the product vendors themselves as well as by a number of system integrators (SIs) who can also be termed as Package Software Application Services Vendors (PSASVs). These PSASVs operate in a very complex stakeholders' environment. On one hand, they have to depend on the product vendors for the product related developments and issue resolution. And, on the other hand, they have to guide the customers in selecting a product and then helping the customer to implement and manage the product applications.¹

Though these firms, involved in enabling strategy formulation and implementation of other firms are successful to a great extent, their own organization strategy lacks proactive approach. This paper attempts to explore the factors affecting the strategy formulations of packaged software applications services vendors taking into account the extremely dynamic nature of their operating environment.

Keywords: information technology, package software, PSASV, influencing factors, dynamic environment, factor analysis, correlation, regression analysis

I. Introduction

At the highest level, the global software and services industry is structured in two broad areas of Information Technology and Communication. While Information Technology area covers Services, Software, Digital media and Hardware; Communication covers the areas of Service provisioning and Network equipment. Managed services, Integration services, Support services and Online services are the sub classification of services, whereas, the Packaged Applications services fall under the software area.²

During the primitive years of commercial use of computers, software systems were developed in-house from scratch using various development platforms. That followed the era of software products being developed exclusively as unique systems for each organization with very little standardization.

The next phase of software evolution saw the growth of proprietary software widely called as "Packaged Software." Technically Packaged software is a category of information system for which all implementations are essentially identical and generally termed as "template" or "core business model." Meaning, the main functionalities are common to all adopters. While the core components of a package are identical across all user organizations, the implementation into an individual organization is usually configured in a manner to fit the requirements of the local organization and is termed as "Localization."

Packaged software is also sometimes referred to as customizable "commercial off-the-shelf" software. Open source systems or other types of nominally free software are other examples of packaged software. Some standard software packages require little or no configurations on the part of the user before they can be used, while other software packages provide in-built basic features on top of which specific functionalities required by the user can be configured or customized. This paper focusses on the latter.

Gartner studies have implicated that between 50 and 80 percent of IT budgets of the organizations are spent on system implementation and maintenance and not on acquisition of software and hardware. Therefore, implementing and maintaining the enterprise applications usually requires considerable amount of IT resources from underlying firms.

Extremely dynamic business environment adds to the complexity in strategy formulation for the PSASVs. Traditionally, Strategy has been defined statically on the basis of interactions among influencing more or less linear factors at a given slice of time³. But, providing dynamic perspective to strategy has gained momentum now owing to the versatile nature of most of the businesses today⁴. Hence, it has become very important to identify the high velocity variables affecting strategy of the any enterprise⁵, interplay between them, their effect on strategy and responses of various enterprises to the dynamic scenario. While the conceptual importance of dynamic strategic thinking has been widely accepted and adopted in manufacturing sector, its dimensions are yet to be tapped fully in services sector, especially in IT services sector.

Strategic concepts like Value Chain, Supply Chain, Customer Relationship and Core Competency are more prevalent for successful strategy formulation and the IT sector offers solutions in practicing these intricate

concepts. Packaged Software Applications Services Vendors (PSASV) also sometimes referred as Enterprise Solutions Vendors, dealing in implementing customized solutions for areas like Enterprise Resource Planning (ERP), Supply Chain Management (SCM), Customer Relationship Management (CRM) and Enterprise Application Integration (EAI) etc. form a major part of the IT services in today's world for the obvious benefit of reusable pre-configured application provided by them.

1.2 Study Objectives and Scope

To identify the set of variables, important for the successful performance of PSASVs, and to study their inter-relationship in the service creation and delivery.

1.3 Literature review

Through review of the secondary literature involving journal publications, analyst reports and web repositories, the generic factors affecting the performance of the IT industry players have been identified. These factors can primarily be classified into two categories i.e. internal factors and external factors. The first set of factors are internal to the organization. The other set of factors are dependent on external entities and are mostly out of control for the services vendor organization. Based on the secondary literature reviews and interviews with the industry experts, the broad areas that affect the package software services vendors' strategy formulations turn out to be environment, financials, people, processes, structure, governance and technology. Explicit influencing factors coming out of the literature are indicated below.

Table: Factors influencing the Strategy formulation and working of the Packaged Software Application Services Vendors

| No. | Factor | Area | Influencing factors | | | | |
|-----|----------|------------------------|--|--|--|--|--|
| 1 | | Environment | Financial considerations (Cost, Profitability) ⁶ | | | | |
| 2 | | People | Skill development ⁷ | | | | |
| 3 | | Process | Pre-sales solutions ⁸ | | | | |
| 4 | | | Accessibility (Multi locations Operations) ⁹ | | | | |
| 5 | Internal | Structure / Governance | Geographical Locations ⁹ | | | | |
| 6 | | | Organization structure ¹⁰ | | | | |
| 7 | | | Customization and Development Process ¹¹ | | | | |
| 8 | | Technology | Innovation ¹² | | | | |
| 9 | | | Product Related Factors (Quality, Variety) ¹³ | | | | |
| 10 | | | Economic Conditions and Business Environment ¹⁴ | | | | |
| 11 | | | Government Regulations, Legislations and Policy ¹⁴ | | | | |
| 12 | | | Industry Dynamics ¹⁵ | | | | |
| 13 | | Environment | Local Issues ¹⁶ | | | | |
| 14 | | | Mergers and Acquisitions ¹⁷ | | | | |
| 15 | | | Other markets and players ¹⁸ | | | | |
| 16 | | | Social and Demographic Factors ¹⁸ | | | | |
| 17 | | Financials | Licensing Costs ¹⁹ | | | | |
| 18 | External | People | Cultural Issues and Knowledge Gap ²⁰ | | | | |
| 19 | External | Process | Changes in the sales process ²¹ | | | | |
| 20 | | 1100035 | Product Process ²² | | | | |
| 21 | | | Globalization related factors (World class IT, Knowledge of English) ²³ | | | | |
| 22 | | Structure / Governance | Role of Industry organization i.e. NASSCOM ²⁴ | | | | |
| 23 | | | Structure and Governance (Alliances, Partnership, Vendors) ²⁵ | | | | |
| 24 | | m 1 1 | Data Protection ²⁵ | | | | |
| 25 | | Technology | Technology ²⁶ | | | | |

1.4 Research Design

Researching strategy formulation and implementation for dynamic environment like packaged software application services requires the right balance between quantitative and qualitative methods. A contingent research approach identifies such a balance. This study focuses on statistical analysis leveraged to arrive at the relevant dependent and independent variables. Primary set of the variable to prepare the questionnaire is coming

out of the literature review. As further research, Output may be run iteratively through the case studies to arrive at the final set.

1.4.1 Sampling

In order to pursue the study, a convenient random sampling technique has been adopted. For this study, a total of 200 respondents were selected for the study. These respondents belong to the strategic decision making team of various Foreign MNCs, top Indian giants of IT industry, SMEs and small vendors. These respondents were having direct involvement in the strategy formulation related to packaged application business of the organization.

1.4.2 Questionnaire and Data Collection

To collect the data, an extensive questionnaire was prepared containing the questions regarding the strategic decision making factors, internal factors and external factors. The questionnaire included multiple questions involving open ended questions, closed ended questions, partial opened questions, scaled questions and ranking questions as indicated in the table below. Five points Likert scale has been used for responses with options of strongly agree, agree, neither agree nor disagree, Disagree and Strongly Disagree.

| Question Type | Uses | Advantages | Disadvantages |
|--|--|--|---|
| Open-ended (essay or short-answer) | Discover relevant issues Obtain a full range of responses Explore respondents views in-depth | Identifies issues most relevant to respondents Generates new ideas about topic Clarifies respondents positions Provides detail and depth | Requires more time, thought and communication skill to complete Requires time-consuming data entry May generate incomplete or irrelevant data Complicates data summary and analysis |
| Close-ended (multiple-choice or yes/no) | Ask many questions in a short time period Assess learning or attitudes when issues are clear Measure knowledge or ability | Fast and easy to complete Inables automated data entry Facilitates data analysis and summary of data | Limits response options May omit a preferred answer Requires moderate knowledge of the topic to write appropriate questions and responses Lacks detail and depth |
| Partial open-ended (multiple-choice with 'other' option) | Ask many questions in a short time period Assess learning or attitudes when issues are clear and identifiable Discover relevant issues | Enable respondents to create their own response if choices do not represent their preferred response Generates new ideas about topic Fast and easy to complete | Requires moderate knowledge of the topic to write appropriate questions and responses Lacks detail and depth Complicates data analysis and summary |
| Scaled | Determine the degree of a response, opinion, or position | Provides a more precise measure than yes/no or true/false items Fast and easy to complete Enables automated data entry | Requires moderate knowledge of the topic to write appropriate questions |
| Ranking | Determine the relative importance to respondents of various options Choose among various options | Allows respondents to indicate the relative importance of choices Enables automated data entry | More difficult to answer Limits number of response options May omit a respondent's preferred answer |

The initial selection of internal and external factors was done through extensive review of literature (explained in section 1.3) and later on run through the exploratory factor analysis and principle component analysis (explained in section 2.1). As a result, the final internal and external factors were selected for the study. The data were collected through mailed questionnaire, personal interviews and questionnaire survey method.

II. Identification of Factors (Internal and External) affecting the PSASVs - The quantitative construct

A number of questions were asked to sample respondents regarding the internal and external factors, and with the help of exploratory factor analysis and principle component analysis a total of 12 factors were selected for the study. These 12 factors consist of 6 internal factors and 6 external factors.

2.1 Exploratory Factor Analysis to identify the influencing factors / variables

2.1.1 Total Variance Explained – Independent Variables

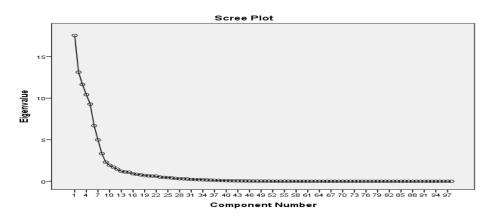
The table below lists the eigenvalues associated with each linear factor before and after extraction and also after rotation. Before extraction, the SPSS has identified a total of 98 linear factors within data set. The eigenvalues associated with each factor represents the variance explained by the particular linear component. The same is also represented in terms of the variance explained by one particular factor with respect to the total variance. If we observe the factor loadings after extraction, then 12 factors are selected based on the eigenvalues which explains approximately 86% of the total variance. Factor 1 explains highest variance, which is 17.91%

while other 11 factors explains 13.39%, 11.88%, 10.63%, 9.47%, 6.83%, 5.08%, 3.40%, 2.34%, 1.96%, 1.73%, 1.47% variances respectively.

In the final part of table (labelled as Rotation sums of squared loadings), the eigenvalues of the factors are displayed. Rotation has the effect of optimizing the factor structure and one consequence for these data is that the relative importance of these 12 factors is equalized. Post rotation, the equalized explanatory powers of 12 factors have improved and these factors explain 16.9%, 11.35%, 10.56%, 8.81%, 8.69%, 8.43%, 5.83%, 4.60%, 3.39%, 2.63%, 2.45% and 2.44% variances respectively.

| | Total Variance Explained – Independent Variables Extraction Sums of Squared Rotation Sums of Squared | | | | | | | | | | | | | |
|--------------|---|------------------|----------------|-------|---------------------|--------------|--------------------------------------|------------------|--------------|--|--|--|--|--|
| Component | | Initial Eigenv | ralues | Exti | action Sums Loading | 1 | Rotation Sums of Squared Loadings | | | | | | | |
| Component | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % | | | | | |
| 1 | 17.552 | 17.91 | 17.91 | 17.55 | 17.91 | 17.91 | 16.56 | 16.9 | 16.9 | | | | | |
| 2 | 13.123 | 13.391 | 31.301 | 13.12 | 13.391 | 31.301 | 11.13 | 11.357 | 28.257 | | | | | |
| 3 | 11.651 | 11.889 | 43.19 | 11.65 | 11.889 | 43.19 | 10.35 | 10.564 | 38.82 | | | | | |
| 4 | 10.418 | 10.631 | 53.82 | 10.42 | 10.631 | 53.82 | 8.64 | 8.816 | 47.636 | | | | | |
| 5 | 9.283 | 9.472 | 63.292 | 9.283 | 9.472 | 63.292 | 8.522 | 8.696 | 56.332 | | | | | |
| 6 | 6.697 | 6.833 | 70.126 | 6.697 | 6.833 | 70.126 | 8.268 | 8.437 | 64.769 | | | | | |
| 7 | 4.982 | 5.083 | 75.209 | 4.982 | 5.083 | 75.209 | 5.715 | 5.831 | 70.6 | | | | | |
| 8 | 3.336 | 3.404 | 78.613 | 3.336 | 3.404 | 78.613 | 4.515 | 4.607 | 75.207 | | | | | |
| 9 | 2.302 | 2.349 | 80.962 | 2.302 | 2.349 | 80.962 | 3.322 | 3.39 | 78.597 | | | | | |
| 10 | 1.921 | 1.96 | 82.923 | 1.921 | 1.96 | 82.923 | 2.583 | 2.636 | 81.233 | | | | | |
| 11 | 1.698 | 1.733 | 84.655 | 1.698 | 1.733 | 84.655 | 2.403 | 2.452 | 83.685 | | | | | |
| 12 | 1.442 | 1.471 | 86.126 | 1.442 | 1.471 | 86.126 | 2.392 | 2.441 | 86.126 | | | | | |
| 13 | 1.206 | 1.23 | 87.357 | | | | | | | | | | | |
| 14 | 1.122 | 1.145 | 88.502 | | | | | | | | | | | |
| 15 | 1.09 | 1.112 | 89.614 | | | | | | | | | | | |
| Extraction M | ethod: Prin | cipal Compo | nent Analysis. | | | | | | | | | | | |

The same analysis is also confirmed by the scree plot of the factor analysis. The scree plot graphs the eigenvalue against the factor number. After factor 12, the plot line is almost flat. Meaning, each successive factor is accounting for smaller amount of the total variance after factor 12. Hence, a total of 12 factors (Both external and Internal) have been selected for the study.



The result of rotated component matrix, which is a matrix of the factors loadings for each variable onto each factor, suggests the following twelve factors: Customization and Development process, Technology and Data Protection, Product Process and Innovations, Country / Region specific Local Issues, Financial consideration (Cost, Profitability), Organization Structure, Skill Development, Quality of Customers, Structure and Governance (Alliances, Partnership, Vendors), Social and Demographic Factors, Global Economic Conditions and Business Environment, Pre-Sales Approach. These 12 factors belong to internal as well as external factors. The six internal factors are Organization Structure, Financial consideration (Cost, Profitability), Skill Development, customization and development process, product process and innovations, and Pre-Sales Approach. The 6 external factors are Technology and Data Protection, Country / Region specific Local Issues, Structure and Governance (Alliances, Partnership and Vendors), Social and Demographic Factors, Global Economic Conditions and Business Environment and Quality of Customers.

2.1.2Total Variance Explained – Dependent Variables

The table below lists the eigenvalues associated with each linear factor before extraction. Before extraction, the SPSS has identified a total of 3 linear factors within data set. The eigenvalues associated with each factor represents the variance explained by the particular linear component. The same is also represented in terms of the variance explained by one particular factor with respect to the total variance. If we analyse the factor loadings before extraction, then 1 factor is selected based on the eigenvalues which explain approximately 74.5% of the total variance. This factor referred as 'Strategic Focus Attributes' (SFA) here onwards, relates to Revenue of the Firm, Profit Margin, Customer Satisfaction and Employee Satisfaction.

| | Total Variance Explained – Dependent Variables | | | | | | | | | | | | |
|-----------|--|---|------------------------|-----------------|---------------|--------------|--|--|--|--|--|--|--|
| Component | | Initial Eigenvalues Extraction Sums of Squared Loadings | | | | | | | | | | | |
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % | | | | | | | |
| 1 | 2.234 | 74.468 | 74.468 | 2.234 | 74.468 | 74.468 | | | | | | | |
| 2 | .703 | 23.426 | 97.894 | | | | | | | | | | |
| 3 | 3 .063 2.106 100.000 | | | | | | | | | | | | |
| | | Extraction M | lethod: Principal Comp | onent Analysis. | | | | | | | | | |

2.1.3 Final Variables for analysis

The final factors and corresponding variables for the study are listed in the table below.

| Sr. No | Factor Type | Variables |
|-----------|---------------------------|--|
| 1 | Independent (Internal) | Organization Structure, Financial consideration (Cost, Profitability), Skill Development, customization and development process, product process and innovations, and Pre-Sales Approach |
| 2 | Independent (External) | Technology and Data Protection, Country / Region specific Local Issues, Structure and Governance (Alliances, Partnership, Vendors), Social and Demographic Factors, Global Economic Conditions and Business Environment and Quality of Customers |
| 3 | Dependent | Strategic Focus Attributes (Revenue of the Firm, Profit Margin, Customer Satisfaction, Employee Satisfaction) |

III. Results and Discussion

3.1 Correlation amongst Strategic Focus Attributes, Internal Factors and External Factors

The table below presents the correlation amongst 12 variables (internal and external) and the SFA (strategic focus attribute). The Customization and Development Process variable is having a Pearson correlation coefficient of -0.183 which is significant at 95% confidence interval because the p value is less than 5% level of significance value. Similarly, other variables i.e. Technology and Data Protection, Product Process and Innovations, Country / Region specific Local Issues, Financial consideration (Cost, Profitability), Organization Structure, Skill Development, Pre-sales approach, Structure and Governance (Alliances, Partnership, Vendors), Social and Demographic Factors, Global Economic Conditions and Business Environment, Government Regulations, Legislations and Policy are having correlation coefficient of 0.165, 0.342, 0.337, 0.586, -0.197, 0.222, -0.254, 0.153, 0.207, -0.022 respectively. Except Government Regulations, Legislations and Policy, all other variables are having significant correlation with strategic factor related attributes.

| | | | | | | | Correlation | 15 | | | | | | |
|---------------------------|----------------------------|---|--|--|--|--|---|-------------------------------|--------------------------|--------------------------------|--|--|---|-------------------------------|
| | | Strategi c Focus Attribut es (SFAs) | Customizat ion and Developme nt Process | Technolo gy and Data Protectio n | Product Process and Innovati ons | Count ry / Regio n specif ic Local Issues | Financial considerat ion (Cost, Profitabilit y) | Organizati on Structure | Skill Developm ent | Quality of Custom ers | Structure and Governa nce (Alliance s, Partnersh ip, Vendors | Social and Demograp hic Factors | Global Economic Condition s and Business Environm ent | Pre- Sales Approa ch |
| Strategic Focus | Pearson Correlati on | 1 | 183** | .165* | .342** | .337** | .586** | 197** | .222** | -0.073 | 254 ** | .153* | .207** | -0.022 |
| Attributes (SFAs) | Sig. (2- tailed) | | 0.01 | 0.02 | 0 | 0 | 0 | 0.005 | 0.002 | 0.308 | 0 | 0.031 | 0.003 | 0.762 |
| | N | 199 | 199 | 199 | 199 | 199 | 199 | 199 | 199 | 199 | 199 | 199 | 199 | 199 |
| Customizat ion and | Pearson Correlati on | 183** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Developme nt Process | Sig. (2- tailed) | 0.01 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | N | 199 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 |
| Technolog | Pearson Correlati on | .165* | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| y and Data Protection | Sig. (2- tailed) | 0.02 | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | N | 199 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 |
| Product Process and | Pearson Correlati on | .342** | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Innovation s | Sig. (2- tailed) | 0 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
|----------------------------------|----------------------------|----------------|------------------|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | N | 199 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 |
| Country/ Region | Pearson Correlati on | .337** | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| specific Local Issues | Sig. (2- tailed) | 0 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 155465 | N | 199 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 |
| Financial considerati | Pearson Correlati on | .586** | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| on (Cost, Profitabilit | Sig. (2- tailed) | 0 | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| у) | N | 199 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 |
| Organizati on Structure | Pearson Correlati on | 197** | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Sig. (2- tailed) | 0.005 | 1 | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | 1 |
| | N | 199 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 |
| Skill | Pearson Correlati on | .222** | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Developme nt | Sig. (2- tailed) | 0.002 | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 |
| | N | 199 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 |
| Quality of Customers | Pearson Correlati on | -0.073 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| | Sig. (2- tailed) | 0.308 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 |
| | N | 199 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 |
| Structure and Governanc | Pearson Correlati on | 254** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| e (Alliances, Partnership | Sig. (2- tailed) | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | 1 | 1 |
| , Vendors) | N | 199 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 |
| Social and | Pearson Correlati on | .153* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| Demograp hic Factors | Sig. (2- tailed) | 0.031 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | 1 |
| | N | 199 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 |
| Global Economic Conditions | Pearson Correlati on | .207** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| and Business | Sig. (2- tailed) | 0.003 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | 1 |
| Environme nt | N | 199 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 |
| Pre-Sales | Pearson Correlati on | -0.022 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Approach | Sig. (2- tailed) | 0.762 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | |
| | N | 199 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 |
| **. Correlati | on is signific | cant at the 0 | .01 level (2-tai | led). | | | | | | | | | | |
| *. Correlatio | n is significa | ant at the 0.0 | 5 level (2-taile | ed). | | | | | | | | | | |

3.2 Regression Analysis

The following regression equation is estimated.

SFA = α + β 1 Customization and Development process + β 2 Technology and Data Protection

- $+ \beta$ 3 Product Process and Innovations $+ \beta$ 4 Country and Region specific Local Issues
- + β5 Financial consideration (Cost, Profitability) + β6 Organization Structure
- $+ \beta 7$ Skill Development $+ \beta 8$ Quality of Customers
- + β9 Structure and Governance (Alliances, Partnership, Vendors)
- + $\beta10$ Social and Demographic Factors
- + $\beta11$ Global Economic Conditions and Business Environment + $\beta12$ Pre
- Sales Approach + ϵ

Where:

- SFA is strategic factors related attributes.
- α is the constant term of regression equation.
- \(\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7, \beta_8, \beta_9, \beta_10, \beta_{11}, \beta_{12}\) are the coefficient of the independent variables

The table below presents the model summary of regression. The table provides the R, R^2 and adjusted R^2 values. In this table, the R value is 0.926, which represents the high degree of correlation. The R^2 and adjusted R^2 value indicates the goodness of fit of the regression model. The adjusted R^2 value of 0.848, shows that 84.8% of the variation in the dependent variable, "SFA", can be explained by the set of chosen independent variables i.e., "Pre-Sales Approach, Structure and Governance (Alliances, Partnership, Vendors), Country / Region specific Local Issues, Customization and Development Process, Social and Demographic Factors, Product Process and

Innovations, Financial consideration (Cost, Profitability), Technology and Data Protection, Skill Development, Global Economic Conditions and Business Environment, Organization Structure and Quality of Customers."

| Model Summary ^b | | | | | | | | | | | | |
|----------------------------|--------|----------|---------------|-------------------|----------|---------|-----|--------|----------|--------|--|--|
| | | | Adjusted R | Std. Error of the | | Durbin- | | | | | | |
| Model | R | R Square | Square Square | Estimate | R Square | F | df1 | df2 | Sig. F | Watson | | |
| | Square | | Estimate | Change | Change | uii | uiz | Change | vv atson | | | |
| 1 | .926a | 0.857 | 0.848 | 0.38961731 | 0.857 | 93.194 | 12 | 186 | 0 | 1.897 | | |

a. Predictors: (Constant), Pre-Sales Approach, Structure and Governance (Alliances, Partnership, Vendors), Country / Region specific Local Issues, Customization and Development Process, Social and Demographic Factors, Product Process and Innovations, Financial consideration (Cost, Profitability), Technology and Data Protection, Skill Development, GlobalEconomic Conditions and Business Environment, Organization Structure, Quality of Customers

b. Dependent Variable: Strategic Focus Attributes (SFAs)

The table below is **ANOVA** table which indicates that the regression model predicts the outcome variable significantly well. The value of F-statistics is 93.14, which is significant at 5% level of significance (the sig. value is less than 0.05). Thus we can conclude that model is correctly defined.

| | ANOVA ^a | | | | | | | | | | | |
|-------|--------------------|----------------|-----|-------------|--------|-------------------|--|--|--|--|--|--|
| Model | | Sum of Squares | Df | Mean Square | F | Sig. | | | | | | |
| | Regression | 169.765 | 12 | 14.147 | 93.194 | .000 ^b | | | | | | |
| 1 | Residual | 28.235 | 186 | 0.152 | | | | | | | | |
| | Total | 198 | 198 | | | | | | | | | |

a. Dependent Variable: Strategic Focus Attributes (SFAs)

The coefficient of each independent variable is presented in the table below. Except for Pre-Sales Approach variable, all other independent variables significantly explain the variation in the dependent variable. The coefficient of variable 'Customization and Development Process' is -0.183 (which is significant at 95% confidence interval) indicating that if the independent variable (Customization and Development Process) will change by 1 unit then the dependent variable will change by 0.183. Similarly, the coefficient of other explanatory variables is as follows; Technology and Data Protection (0.164), Product Process and Innovations (0.341), Country / Region specific Local Issues (0.336), Financial consideration (0.584), Organization Structure (-0.195), Skill Development (0.221), Quality of Customers (-0.072), Structure and Governance (-0.253), Social and Demographic Factors (0.152), Global Economic Conditions and Business Environment (0.206) and Pre-Sales Approach (-0.021). Amongst all these variables, financial consideration (Cost, Profitability) is having highest coefficient which is indicating its high explanatory power in explaining the dependent variable.

| | | | | Coefficients ^a | | | | |
|-------|--|-------------------|-----------------|------------------------------|--------|-------|---------------------|----------------------|
| Model | | Unstand Coeffi | | Standardized Coefficients | Т | Sia | 95.0% Co Interva | onfidence l for B |
| Model | | В | Std. Error Beta | | 1 | Sig. | Lower Bound | Upper Bound |
| | (Constant) | 0 | 0.028 | | -0.007 | 0.995 | -0.055 | 0.054 |
| | Customization and Development Process | -0.183 | 0.028 | -0.183 | -6.612 | 0 | -0.237 | -0.128 |
| | Technology and Data Protection | 0.164 | 0.028 | 0.165 | 5.945 | 0 | 0.11 | 0.219 |
| 1 | Product Process and Innovations | 0.341 | 0.028 | 0.342 | 12.354 | 0 | 0.287 | 0.396 |
| 1 | Country / Region specific Local Issues | 0.336 | 0.028 | 0.337 | 12.164 | 0 | 0.281 | 0.39 |
| | Financial consideration (Cost, Profitability) | 0.584 | 0.028 | 0.585 | 21.139 | 0 | 0.53 | 0.639 |
| | Organization Structure | -0.195 | 0.028 | -0.193 | -6.976 | 0 | -0.25 | -0.14 |
| | Skill Development | 0.221 | 0.028 | 0.221 | 7.987 | 0 | 0.166 | 0.275 |

b. Predictors: (Constant), Pre-Sales Approach, Structure and Governance (Alliances, Partnership, Vendors), Country / Region specific Local Issues, Customization and Development Process, Social and Demographic Factors, Product Process and Innovations, Financial consideration (Cost, Profitability), Technology and Data Protection, Skill Development, Global Economic Conditions and Business Environment, Organization Structure, Quality of Customers

| Quality of Customers | -0.072 | 0.028 | -0.071 | -2.573 | 0.011 | -0.127 | -0.017 |
|--|-----------------|--------------|--------|--------|-------|--------|--------|
| Structure and Governance (Alliances, Partnership, Vendors) | -0.253 | 0.028 | -0.254 | -9.176 | 0 | -0.308 | -0.199 |
| Social and Demographic Factors | 0.152 | 0.028 | 0.153 | 5.513 | 0 | 0.098 | 0.207 |
| Global Economic Conditions and Business Environment | 0.206 | 0.028 | 0.206 | 7.445 | 0 | 0.151 | 0.261 |
| Pre-Sales Approach | -0.021 | 0.028 | -0.022 | -0.778 | 0.438 | -0.076 | 0.033 |
| a. Dependent Variable: Strates | gic Focus Attri | butes (SFAs) | | | | | |

IV. Conclusion

Based on the results, the PSASVs tend to be Strategizing around the Strategic focus attributes of Revenue of the Firm, Profit Margin, Customer Satisfaction and Employee Satisfaction.

And, the key variables affecting the performance of the PSASVs are Customization and Development, Technology and Data Protection, Product Process and Innovations, Country / Region specific Local Issues, Financial considerations, Organization Structure, Skill Development, Quality of Customers, Structure and Governance, Social and Demographic Factors, Global Economic Conditions and Business Environment and Pre-Sales Approach, not necessarily in the given order. Financial considerations involving Cost of administering the services and Profitability influenced by the external factors is having the highest say in the strategic direction of the organization.

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