Abstract:
This paper identifies the factors influencing the project selection methods and techniques in software organizations working in Pakistan. Success of the organization is based on the selected projects, if the selection process is weak in terms of selection decisions that can lead to wrong selection of projects and ultimately can lead the organization to stray away from its desired goals. A quantitative approach is used to explore the project selection team strengths. Online survey is conducted through Information and Communication Technology (ICT) professionals and stakeholders involved in project selection. A positive and strong relation between project management role and project selection is observed. Project management role is played by project manager who are always involved in a project from inception till closure. The facts, which can help in effective project selection thus improving the organizational performance and bringing down the risks of project failure, are tried to unveil. Selection of projects must involve proper methods and concerned people to get optimum results.

Keywords: Project Management Role; Voice of Customer; Strategic Business Role; Project Selection Methods.

Paper Type: Research Paper

2) Background
Companies are surrounded by a number of projects but none of the organization is so rich in resources to accept and accomplish all of them. There is always a need to make choices out of what is available to them. It is necessary for the companies to make it sure that they select such projects which are highly profitable and can pay the cost of not availing other opportunities. Companies need to have proper guidelines to balance the available options and the costs of business. In this era of extreme competition and hype of technological innovation, there is a need for organizations to take lead in the market to have a secure market position which is possible only if organizations become efficient in their projects selection processes. Time and money are the two most important factors to be considered while selecting a project. Decisions prove to be successful only if these two factors are managed effectively. Time saving and economical methods must be selected to increase the likelihood of successful projects. It has been observed though a number of previous researches that IT sector has faced huge number of project failure in last fifteen years. Agency related problems to be the most common cause of project failure at such a high frequency in IT sector. Financial department of the organization must be involved in project selection processes to ensure the selection of financially feasibly projects. There are a number of methods to be adopted for project selection based on the nature of the project and factors which influence them. These projects may take both qualitative and quantitative approach either simultaneously or alternatively. In spite of presence of large number of project selection methods, it is difficult for the decision makers to select right project as they cannot make right decisions about project selection methods [3-5].

This research is designed to work out the most promising method to be adopted while selecting projects in IT sector. A number of project selection methods, which are reported by previous researches on given area, are focused in this study. Furthermore, to collect direct views from employees of IT sector and management and clients (customers) about the problem in hand, a well-organized questionnaire comprising of questions which were supposed to generate valuable information about issue under discussion, is designed.

3) Broad Problem Area
Project selection process is of extreme importance in every organization as selection of right projects leads the organization to achieve its specified goals. There are a number of project selec...
selection methods and techniques available to organizations. If a firm manages to select right approach towards project selection, it will surely gain competitiveness in the market. IT sector, all across the world in general and in Pakistan in particular, is facing challenging situations in terms of project selections methods and their implementation. There is a dire need to bring project selection methods to light which can be helpful in improving the business process of IT sector in Pakistan.

4) Specific Problem Statement
Rightly selected projects are the keys to success for every organization belonging to any industrial sector but this importance becomes more pronounced in information technological sector. There are a number of project selection methods and techniques which, if employed properly as per requirements of time and nature of project, can lead the organizations to take its desired place in the market. What project selection methods suit best to IT sector in Pakistan is the basic problem of this particular research?

5) Aim of the Study
Every organization has to make certain decision while selecting some specific projects out of all available options. Project selection is a complicated process where a large number of factors are taken into consideration. IT organizations across Pakistan are inclined to opt any of the three given methods of project selection:

2. Constrained Optimization Method.
3. Expert Judgment

This research is aiming to assist IT organizations of Pakistan to increase their business performance by improving the efficiency of business processes. The aim is to explore a suitable project selection method which is sufficient to enable organizations to make right selection or a mix of two suitable methods.

6) Research Objectives
The objectives of this study are as under:

- Project selection techniques: Detailed study of project selection methods.
- Project success factors and the level of their realization in the Pakistani IT sector.

Based on the above point’s findings, we will draw a conclusion towards the business-process (selection method(s) and/or their mix) that whether there is an issue with the selection method (i.e. incorrect method was chosen) or with the business-process model itself (i.e. important factors from within the project selection methodology are overlooked).

II. Literature Review

1) Definitions of Key Terms

Business Process: All those activities, operations and processes which are undertaken by an organization in order to achieve some specified goals and objectives are termed collectively as business processes. These business activities are destined to offer something valuable to the customers [6].

Stakeholders: All those people or organizations which are linked either directly or indirectly with organizational business are termed as stakeholders. Stakeholders of an organization may take several forms, depending upon the nature of business. Information communication and Technology Company for which following are the major stakeholder: employer (clients and customers), employees, financial institutions and sponsors, should be taken into consideration [7].

Project Management Office (PMO): This unit has to take care of all the activities starting from project selection till delivery of the product to target customers or the clients. PMO makes it sure that all the necessary steps required to accomplish the project are executed in an ordered manner [8].

Voice of Customer (VoC): The needs and requirements of the clients and the customers are reflected through VoC. Projects should be arranged in line with acute customer and business issues [9].

2) Project Selection

Project selection is the process of choosing a project or set of projects to be implemented by the organization. Since projects in general require a substantial investment in terms of money and resources, both of which are limited, it is of vital importance that the projects that an organization selects provide good returns on the resources and capital invested. This requirement must be balanced with the need for an organization to move forward and develop. The high level of uncertainty in the modern business environment has made this area of project management crucial to the continued success of an organization with the difference between choosing good projects and poor projects literally representing the difference between operational life and death. Conventional methodologies also help communication and support organization structures thought, based on modeling and considering alternatives, which may help reduce the subjectivity. Decision making in groups can suffer from biases and power instability, but executives recognize the benefits of an organized approach and it should be possible to minimize the impact of these factors [10].

a) Initiating the Project Selection

Initiation is the process to authorize a new project to begin. In addition, initiation can be the process to determine if a project should advance to the next phase of the project life cycle. In many organizations, a formal determination process establishes the need for the project. This formal process can include the initial needs assessment, the feasibility study, a preliminary project plan, etc. In other organizations, the determination process is more informal and is based on the project objectives: internal work orders, add/move/change projects, and other conditions. In either case, there is some method of securing the needed resources and authority to move forward into the project management life cycle. For a project to become authorized, formally or informally, management must recognize the need.
(or the perception of the need) and determine how to respond. The response can be yes, move forward with the project; no, the project is not authorized; or, the need may exist but additional information is needed to make a decision. The need and authorization for projects, regardless of the selection methods, can come from one or more sources:

**Marketplace Opportunity:** A demand in the marketplace calls for the performing organization to meet the need in order to realize new profits [11].

**Business Need:** The project is created to grow the business, support the organization’s vision, or to create a new a product or service in a commercial venture [7].

**Customers:** The performing organization’s customers have requested the project to create a new product or service [12].

**Advances in technology:** New technology has surpassed current implementations. The benefits of the new technology are valued [13].

**Legal:** New laws or mandates require organizations to change their practices, adjust to safety requirements, and provide additional services [14].

**Social:** A project may be created to resolve a problem within a community or culture based on identified needs [15].

**b) Examining the Product Description**

Project management refers to a set of administrative activities necessary to manage a number of programs, necessary to achieve the strategic objectives of the work. Projects are used by a number of organizations for developing new products and processes. The product description details the product, the project will create. The product description will generally be vague in the early stages of the project and becomes more detailed as the project moves towards a solution through progressive elaboration. Progressive elaboration is the process of allowing the project to evolve and the project characteristics to come into focus based on the needs of the stakeholders and the feasible solution [16].

**c) Considering Client-Vendor Relationships**

Product description is provided by the buyer which may not be a formal document, but a conversation or informal document of what the final product should be. The vendor should document and create the product description for several reasons, when it comes to organizations, such as consultants, integrators, architectural firms, and more. It confirms that the buyer and the seller are in agreement regarding the project’s characteristics. It guides the seller to progressive elaboration and allows the buyer to refine the product description. Accurate communication between the buyer and the seller provides clear input to scope planning processes. Online communication swiftly increases trust factor among client and vendor for receiving products and just in time delivery [17, 18].

**d) Working with Strategic Plans**

All projects should map to the strategic plans of the performing organization. For example, packaging suppliers for food manufacturer has very specific market. The packing supplier should focus on food manufacturers and their need for labels, shrink-wrap, food containers, boxes, and other food-packaging product. The strategic plan of the performing organization focuses on the business, community, or not-for-profit group. Projects that don’t support the strategic plan of an organization are not likely to be selected or be successful.

**e) Examining the Project Selection Criteria**

Return on investment, opportunities, market share, customer perspective, demand for the product, social needs, increased revenues, and reduced costs are possible considerations in project selection. Attractiveness of the project is also very important. Attractiveness can be measured through proven worth, suspected worth, and the level of uncertainty within the project. When a potential project is evaluated, the project owner, customer, or management wants to reduce business risk specifically project failure risk, which may result in financial loss, customer loss, time loss, fines, inconvenience, and more. Projects with many variables carry more business risk than projects with few variables. Project selection methods are about resolving the unknown, predicting the likelihood of project success, and the expected value of that project’s success or the cost of its failure. Integrating risk management process in portfolio management procedure let the manager to conform the project evaluation and selection, resource allocation and controlling projects in accordance with rights to the identified risks. Neglecting risks at selection level may lead to insufficient reserves and weak preparation for future hazards. There are great limitations in approaches used by commercial enterprise for the selection of projects, but the described methods in the literature do not provide an adequate solution to this problem. Practitioners should be aware of the benefits and disadvantages of road maps and must acknowledge with the choice of selected methods [19-21].

**3) Benefit Measurement Methods**

Benefit measurement methods are all about comparing values of one project against the values of another. The projects with higher, positive values typically get selected over projects with low values [22]. Here are some common benefit measurement methods you may encounter:

**a) Murder Boards**

Murder boards are committees full of folks who ask every conceivable negative question about the proposed project. Their goal is to expose strengths and weaknesses of the project and kill the project if it deems worthless for the organization to commit [23].

**b) Scoring Models**

Scoring models (sometimes called weighted scoring models) are models which use a common set of values to evaluate the projects for selection. Values can be profitability, complexity, customer demand, etc. Each of these values has a weight
assigned to them. Values of high importance have a high weight, while values of low importance have a low weight. The projects are evaluate against these values and assigned scores according to the predefined values. The projects with high scores take priority over projects with low scores [24].

c) Benefit/Cost Ratios
Just like they sound, benefit/cost ratio (BCR) models examine the cost-to-benefit ratio. A typical measure is the cost to complete the project, the cost of ongoing operations of the project product, compared against the expected benefits of the project. For example, consider a project that will cost $575,000 to create a new product, market the product, and provide ongoing support for the product for one year. The expected gross return on the product, however, is $980,000 in one year. The benefit of completing the project is greater than the cost to create the product [25].

d) Payback Period
How long does it take the project to “pay back” the costs of the project? For example, the AXZ Project will cost the organization $500,000 to create over five years. The expected cash inflow (income) on the project deliverable, however, is $40,000 per quarter. From here it’s simple math: 500,000 divided by $40,000 is 12.5 quarters, or a little over three years to recoup the expenses. This selection method, while one of the simplest, is also the weakest. Why? The cash inflows are not discounted against the time to begin creating the cash. This is the time value of money. The $40,000 per quarter five years from now is worth less than $40,000 in your pocket today.

4) Constrained Optimization Methods
Constrained optimization methods are complex mathematical formulas and algorithms that are used to predict the success of projects, the variables within projects, and tendencies to move forward with selected project investments. These selection methods are not typically used for most projects, but large and complex projects. Here are the major constrained optimization methods:

- Linear Programming
- Nonlinear Programming
- Integer Algorithms
- Dynamic Programming
- Multi-objective Programming
- Relying on Expert Judgment

Bandit problem in applied mathematics and the economics of search demonstrated that under certain conditions it is optimal to select a high-risk option with low probability of success before a safer one. This result is observed if the choice is between two or more alternatives, and only one of the options may be investigated at a time. The critical features of a bandit decision process include the fact that only one of the several available project options is investigated in a period, and only one is ultimately adopted. The selection process also involves several projects with varied degrees of risk and reward [26-28]. Organizations, which adopt innovation and technology, control the market. Therefore, organizations must choose such IT projects which provide them with competitive level required to successfully participate in present and future markets [5, 29].

Minus, Plus, and Interesting (MPI), Weighted Factor and Kordanz methods are used to experience on project evaluation, site selection, site planning, layout and material handling, job evaluation, work team composition, and compensation plans. Many options can be developed to guide the process for others to make evaluations and selection of a preferred option [30]. Mostly researches on the successful implementation of Six Sigma point "to choose the right projects" as one of the key elements of success. Therefore, it seems that the success of Six Sigma system is the ability of management to determine the right combination of Six Sigma projects with this business to maximize the impact with fewer resources allocated to them. Moreover, it is a crucial decision for any organization to identify a subset of projects from a large portfolio to achieve multiple objectives successfully with limited resources. Among various important factors, selection of projects plays an important role in the development and effective implementation of Six Sigma. Selection of good projects are in the same process somewhat and if done correctly, there may be significant improvement in potential benefits of Six Sigma significant improvement. With more maturity in Six Sigma processes, companies can expect more benefit with less resource. Therefore, it seems that the success of the Six Sigma program is the administration's ability to determine the right combination of Six Sigma projects to achieve maximum impact for companies with fewer resources allocated to it [31-33].

A systematic approach should be adopted to minimize risks while maximizing returns on IT investments. The investment management process should have elements of three essential phases:

- Project Selection (benefits, risks and costs).
- Implementation & Monitoring (applications, deficiencies and reviews).
- Performance Evaluation (measurements, corrective actions and lessons learned).

A critical aspect of this phase is management participation and application of structured decision-making process. For selection of a project, starting point is the screening of process, in which proposals, submitted for funding are compared against a uniform set of screening criterion, in order to determine whether the project meets minimal requirements or not? The costs, benefits and risks of proposed projects should be then assessed, compared against each other and ranked or prioritized. Traditionally, project selection is treated as a multi-criteria decision-making (MCDM) problem and most tools available in the literature use some parametric model that assigns a priori weights to the project inputs and outputs. Solution obtained using parametric methods are very sensitive to a priori weights assigned to the inputs and outputs. Customer impact, financial impact, top management commitment, measurable and feasible, learning and growth and connected to business strategy and core
competence are the six criteria of project selection. A clear and accurate definition of a project is the first step towards ensuring a project’s success. The clearer the project goal, the more likely you are to achieve it. Eight critical success factors and seven blockers in project implementation in the area of product innovation are in practice. As a result of blockers, success factors may be invisible and projects can go wrong, can take too long or may not well carried out [1, 5, 34-37].

5) **Critical Success Factors**
Eight critical success factors are stated as: Solid up front homework to define the product and to justify the project; Dedication to the voice of customer market and customer inputs throughout the project; Differentiated product with unique benefits and superior value for the customer; Sharp, stable and early product definition before development begins; Target market, concepts, benefits and positioning; Features and specifications, a well-planned, adequately resourced and proficiently executed launch; Tough go/kill decision points or gates to disapprove marginal projects and to remove misallocating of resources; Accountable, dedicated, supported cross functional teams with strong leaders throughout the entire project from beginning to end; An international orientation, i.e. international teams, multi country market research etc.

Seven blockers are identified as: Ignorance (do not know what should be done in a well-executed project), lack of skills (do not know how to do key tasks and underestimate what is involved in these tasks); Faulty or misapplied new product process (missing key elements, laden with bureaucracy or over applied processes); Too confident (believe that already know the answer); A lack of discipline (no leadership, big hurry and cut corners and too many projects and not enough resources) [1].

6) **Literature Gap(s)**
This is the responsibility of decision makers to judge and understand the options of evaluation and selection of a project. Unfortunately decision makers sometimes avoid this responsibility. In many cases voice of customer (VoC) is neglected or is not fully considered especially in the product development. Different selection criteria are in use and are usually part of the original methodologies but are not the true representation of the methodologies defined.

7) **Description of the Model**
Figure below presents a conceptual framework. Project Selection is placed as dependent variable and Project Management Role, Voice of Customer, and Strategic Business Role are three independent variables.

III. **Rationale of Study**
Globalization and high competitive environment have involved multinational stakeholders in every field of life, especially in IT sector. Result oriented and profitable product delivery is at top priority of service providers. Selection of a good and market competitive project is the main consideration for service providers as it has direct impact on project delivery time, cost and quality. It is very important to select a project that meets its deadlines in accordance with its quality, cost and requirement changes. Implementation of projects related to information technology is still in grey area, different perceptions are prevailing based on theorists’ and practitioners’ point of view. For a successful business change, project selection is the most critical factors, for both the long term and short term projects. To get significant results in quick time, it is of great importance to identify projects of high impact in early stages of a program.

IV. **Research Questions and Hypotheses**

RQ1. What is the impact of “Project Management Role” on “Project Selection Process”?  
RQ2. To what extent “Voice of Customer” is affecting “Project Selection Process”?  
RQ3. What kind of decision can be developed by strategy makers regarding “Project Selection Process”?  

1H1. “Project Management Role” has positive impact on “Project Selection Process”.  
2H1. “Voice of Customer” has positive impact on “Project Selection Process”.  
3H1. “Strategic Business Role” has positive impact on “Project Selection Process”.

V. **Methodology**
Research is basically an experimental development that goes under formal work in a systematic manner to gain further knowledge about real world. Research can be performed in consideration of different aspects that are, whether we are going to develop an idea about some innovative or new things or we are going to conduct our research for expansion of any past work that has been done in a specific field. A systematic approach cannot be fulfilled without adopting some methodological ways to perform that research. So different
research methodologies have been used and discussed in this research paper to find the fruitful data driven results. For this particular research, closed ended questionnaire has been designed on a five point likert scale i.e., 1: Much Greater Extent, 2: Greater Extent, 3: Uncertain, 4: Little Extent, 5: Very Little Extent. Questionnaire consists of seventeen (17) questions; Management Role (5), Voice of Customer (6), Strategic Business Role (3), and Project Selection Process (3). Three types of people, who are generally involved in the process of project selection, are selected as sampling units. Main stakeholders regarding project selection are project manager, customers/clients of project and business teams where business heads, financial executives, marketing executives, team leads and owners of organization working in software industry of Pakistan. Twenty one different projects have been selected and three persons from each project have been involved in survey. A total of sixty three questionnaires were delivered and sixty six responses were received. A pilot survey was run before the final data collection. Reliability and validity of the instrument was tested by Cronbach’s Alpha and Expert opinion respectively through a pilot survey. General Linear Model (GLM) was used to explore the relations.

VI. Results and Discussion

The percentages of respondents working in different types of “Software Technology Projects” are Android (30%), Java (10%), and PhP (60%). The “Project Duration” percentages are Lead (20%), Lag (55%), and On Time (25%). Male participation is dominant with 90% against 10% Female participation. The frequency of data regarding Software Project Type, Duration of Project, Gender, and Questionnaire with responses are give in Table 1, Table 2, Table 3, and Table 4, respectively. General Linear Model (GLM) is applied to test the stated hypotheses. Project Management Role ($\beta = 0.259, p = 0.025$) and Voice of Customer ($\beta = 0.224, p = 0.047$) significantly affect the Project Selection Methods, while Strategic Business Role, Software Technology, and Duration of Project are found insignificant. Project Management Role has slightly higher impact as compared to Voice of Customer. Overall explanation of the model is quite good with $R^2 = 0.448$. Validity of the model assumptions are verified through residual structure. Residuals are found to be normal and homoscedastic. Fist two hypotheses of this study, related to “Project Management Role” and “Voice of Customer” have been accepted and the third one, related to “Strategic Business Role” has been rejected.

VII. Conclusion

Proper project selection is the key for organizational success. IT companies across the world are facing challenging situations in terms of project selection. There are a number of confusions to be addressed in this area to enable the concerned people to make good and profitable selection. Time and money are two most important factors to be considered while selecting a project. Decisions prove to be successful only if these two factors are managed effectively. There are some other factors which are necessary to be considered while making choices and decisions regarding project selection. These factors are considered with three different perspectives i.e., “Voice of Customers”, “Strategic Business Role”, and Project Management Role”. Project managers are found to be most important playing a major role in project selection as “Project Management Role” is the most important variable which affects the project selection process. Project managers are strategy developers and leaders; they must assume full responsibility for the business results of projects. Moreover, “Voice of Customer” can never be ignored as this is the second most important variable playing a major role in the project selection process.

VIII. Recommendations

Following recommendations are suggested regarding “Project Selection Process” in IT sector of Pakistan.

- Project Management Role is found to be most important in this study which affects the “Project Selection Process”. This highlights the importance of all the departmental managers. Especially, financial department must be involved in process of project selection to ensure the selection of financially feasible projects to increase the efficiency of organizational business.
- Organizations must select those information technology and information security projects which enable them to take lead in the market and to sustain their distinguished market place for over a long time period.
- Voice of customer should never be neglected keeping in mind the cost effectiveness and time duration of a particular project. Voice of customer can also be dealt better if projects are made more attractive highlighting their social effectiveness.
- Management and owners of organizations should play a serious and handsome role while selecting the project because in long run any selected project can affect the financial growth of organizations.

IX. Limitations and Future Prospects

This research has been conducted on a very small scale using a convenient sampling technique. Generalization of results may be a problem. Being an academic research, all the work is done without any grant. There is a need to conduct this research at some greater platform, with utilization of vast resources and involvement of large number of IT companies. Further study is required to address more questions on project selection strategies in terms of stakeholders as well as project selection techniques. In future, project selection techniques should be developed with more emphasis on involvement of all stakeholders. If this is done, IT industry of Pakistan can flourish well.

X. References


About the authors

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Basheer Ahmad has obtained his PhD from Graz University of Technology Austria (TUG). His main areas of research are Generalized Linear Mixed Models (GLMMs), Structural Equation Models (SEM), and Financial Models. He is working as Professor of Statistics/Mathematics in the Department of Management Sciences, Iqra University Islamabad, Pakistan.

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XI. Appendix

Table 1: Software Project Type

<table>
<thead>
<tr>
<th>Software Technology</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Android</td>
<td>18 (30%)</td>
</tr>
<tr>
<td>Java</td>
<td>6 (10%)</td>
</tr>
<tr>
<td>PhP</td>
<td>36 (60%)</td>
</tr>
</tbody>
</table>

Table 2: Project Duration

<table>
<thead>
<tr>
<th>Duration of Project</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead</td>
<td>12 (20%)</td>
</tr>
<tr>
<td>Lag</td>
<td>33 (55%)</td>
</tr>
<tr>
<td>On Time</td>
<td>15 (25%)</td>
</tr>
</tbody>
</table>

Table 3: Gender

<table>
<thead>
<tr>
<th>Gender of Respondent</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>54 (90%)</td>
</tr>
<tr>
<td>Female</td>
<td>6 (10%)</td>
</tr>
</tbody>
</table>

Table 4: Questionnaire with Responses

<table>
<thead>
<tr>
<th>Q#</th>
<th>Questions</th>
<th>Frequency of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>1.</td>
<td>To what extent do you feel that management plays role in selection of a project?</td>
<td>21</td>
</tr>
<tr>
<td>2.</td>
<td>To what extent do you think that managers play key role in determining the feasibility of project?</td>
<td>23</td>
</tr>
<tr>
<td>3.</td>
<td>To what extent do you think that cost effectiveness of the project is considered by management?</td>
<td>27</td>
</tr>
<tr>
<td>4.</td>
<td>To what extent do you consider the sufficiency of managerial resources while selecting a project?</td>
<td>12</td>
</tr>
<tr>
<td>5.</td>
<td>To what extent do you seek help from Project Management Units (PMUs) while selecting a project?</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Question</td>
<td>Yes</td>
</tr>
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<td>---</td>
<td>--------------------------------------------------------------------------</td>
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</tr>
<tr>
<td></td>
<td>To what extent do you see the expectations of the employer linked with</td>
<td>15</td>
</tr>
<tr>
<td>6</td>
<td>the proposed project?</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>To what extent do you undertake stakeholder’s expectations?</td>
<td>27</td>
</tr>
<tr>
<td>8</td>
<td>To what extent do you consider the impact of proposed project on target</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>audiences or customers?</td>
<td></td>
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<tr>
<td>9</td>
<td>To what extent do you consider the interests of customers, employer and</td>
<td>6</td>
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<td></td>
<td>other social groups in the proposed project?</td>
<td></td>
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<tr>
<td>10</td>
<td>To what extent do you consider the project from cost perspective on the</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>behalf of customers?</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>To what extent do you consider the repute of the client to whom the</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>project belongs?</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>To what extent do you consider external business environments while</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>selecting a project?</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Good projects make the organization to earn good repute in the market</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>thus making it to take competitive edge. To what extent do you take</td>
<td></td>
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<tr>
<td></td>
<td>into consideration the level of Strategic business role while selecting</td>
<td></td>
</tr>
<tr>
<td></td>
<td>projects?</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>To what extent do you ask for expert opinion from executives and higher</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>management of the organization while making selection of a project?</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>To what extent do you use individual consultations or group panels while</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>selecting a project?</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>How do you undertake linear and nonlinear programming methods while</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>selecting a project?</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>To what extent do you depend on calculation based</td>
<td>0</td>
</tr>
</tbody>
</table>

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**Basheer Ahmad & Ikram ul Haq | Appendix**

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