

Project Dissertation Report on
COMPARATIVE ANALYSIS OF THE SUCCESS
FACTORS OF OUTSOURCING COUNTRIES

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DECLARATION

I, **Ishita Khurana**, student of **MBA 2016-2018** of Delhi School of Management, Delhi Technological University, Bawana Road, Delhi-110042 declare that the dissertation report on “**Comparative Analysis of the Success Factors of Outsourcing Countries**” has been submitted in partial fulfilment of Degree of Masters of Business Administration is the original work conducted by me.

The information and data given in the report is authentic to the best of my knowledge.

This report is not being submitted to any other university for award other Degree, Diploma and Fellowship.

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CERTIFICATE

This is to certify that the dissertation report titled “**Comparative Analysis of the Success Factors of Outsourcing Countries**”, is a bonafide work carried out by **Ms. Ishita Khurana** of **MBA 2016-2018** and has been submitted to Delhi School of Management, Delhi Technological University, Bawana Road, Delhi-110042 in partial fulfillment of the requirement for the award of the Degree of the Masters of Business Administration.

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EXECUTIVE SUMMARY

The project looked at the success factors for an outsourcing provider and shows how their attractiveness can be improved. By creating a model based on the literature study, the advantages and risks of outsourcing, we saw that outsourcing can be divided into six important dimensions. These dimensions are defined based on the viewpoint of a country.

To define 'attractiveness' we had to set a golden standard to which other countries can be compared. The most logical country, is the one who is the most successful, therefore we chose India. To validate the model, we needed a country close to the success of India, which resulted in China. The outcome of the model from India and China are used to calculate the similarity, which represents the attractiveness. A high cosine similarity means attractive and low similarity means not attractive. Then Bhutan is chosen as the prediction set to measure its attractiveness as an outsourcing provider based on the six dimensions.

By analyzing the success factors for an outsourcing provider, it is possible to improve the attractiveness over time. When the six dimensions are improving, the attractiveness is also improving. The two most important dimensions are the knowledge and government dimensions. These are the catalyst for improving the attractiveness.

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1. INTRODUCTION

The latest and rapidly improving technology go hand in hand with the communication with the rest of the world. These new communication channels are better and more usable than most people would expect. Developing countries have grown faster than the developed countries in the world (Dollar, Hallward-Driemeier, & Mengistae, 2006). Globalization insures that people around the world have more knowledge and are trained for a particular profession.

All these developments are providing opportunities for businesses. A possibility for a business investment could be outsourcing. This paper looks into the attractiveness of an outsourcing provider and what this provider could change to make it more attractive.

1.1. Outsourcing

Outsourcing is central in this research. The end goal is to measure the attractiveness of an outsourcing provider and find ways to improve this attractiveness. The following sub-questions must be answered before the main research question can be answered:

- What is the definition of outsourcing?
Outsourcing is a very wide discipline and not only present in the information technology industry. We found out the exact definition of outsourcing before going any further in this subject.
- What are the benefits and risks of outsourcing?
There are large number of benefits and risks associated with outsourcing, all of them are not within the scope of this research. We understood the most important factors from the viewpoint of an organization, because these were very helpful while creating the model.
- What makes a country attractive as an outsourcing provider?
There must be factors, which make an outsourcing provider attractive. Besides India and China there are more countries that are popular in the IT outsourcing industry. What makes these

countries attractive and how do they measure the attractiveness?

- What is the ideal condition for outsourcing providers?

We found out what is the ideal situation for outsourcing providers. This ideal situation is the goal for other countries.

1.2. Rationale of the Study

The relevance of this research is that outsourcing has grown up from a rare phenomenon to a standard in business strategies. Companies are looking for various ways to minimize their costs and risks. The constant search for new endeavours will make the difference in the long run and information technology provides solutions for organizations to automate certain processes and therefore play a very crucial role.

“On one hand you have the current intensive cost-cutting companies by moving their work offshore. And on the other hand you have the politicians that are using global services offshoring as an easy scapegoat for current economic woes and high unemployment levels in their home countries. Although signs of a slowdown in the growth of global services are evident in this environment, don’t expect offshoring to end. In fact, the global services industry’s full potential is ready to be tapped.” (A.T. Kearney, 2011).

The location of outsourcing business will be determined by a lot of factors. It is interesting to know which countries are attractive. In this research a model is developed to measure the attractiveness of a country and find global ways to improve their attractiveness.

1.3. Objectives of the Study

The primary objective of the research is to analyse the success factors of outsourcing countries which will help to measure the attractiveness of a country.

The secondary objectives of the research are:

- To design a model that will help to measure a country.
- To determine the factors that are important for an outsourcing country.
- To find ways in which countries can improve their attractiveness.

1.4. Research Hypothesis

India, as an outsourcing country, has been the top choice for all the developed countries for many years now. There are various factors which have led to its success as an outsourcing provider. The six dimensions have been identified in the research which can act as success factors for all the countries. The result of India is taken as the Golden Standard for all the other countries. The other countries should try to score as close as to India to become an attractive outsourcing country.

Therefore, the hypothesis is:

The higher the cosine similarity of a country with the standard¹, the more successful the country is as an outsourcing provider.

1.5. Data and Research Methodology

Data Sources

The data used in analysing the six dimensions are taken from the following sources.

- World Bank Open Data
- Central Intelligence Agency

¹ standard here refers to the golden standard established in the study

Methodology

There are many existing papers about outsourcing, so by reading and searching other papers about this subject we tried to understand the know-hows about outsourcing. The research method used is shown in the figure below:

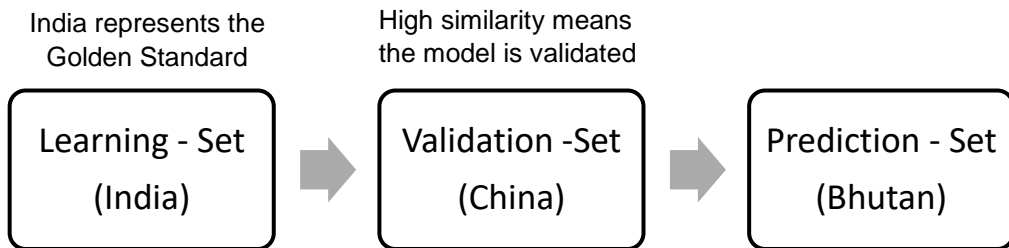


Figure 1.1: Research Methodology

The term outsourcing is defined first, with this information a model is developed. This model consists of various categories and every category is measurable. In the figure above the model will be first used to measure India. The outcome of the model is the current state of a country. Since India is the most popular country, its outcome is used as a golden standard. This means that it is an example for other countries, in other words, a goal for other countries.

We wanted to know whether the model is reliable, this is done by measuring China and calculating the similarity between the outcome of the model from India and China. If it receives a high cosine similarity, our model is validated, since China is the second most popular outsourcing country.

Then the model was used to measure Bhutan, a country not known in the outsourcing industry but perhaps with possible potential. Bhutan is thus the prediction-set.

1.6. Result

The result of the model has the ability to measure the current state of a country. With this outcome we compared it with our defined golden

standard. When it receives a high similarity, the country has a high attractiveness. When it receives a low similarity, there is need for improvements.

The outcome of the model displays the weakest and the strongest points for a particular country.

To finalize this research, Bhutan is used as prediction-set and therefore will be measured with the created model, the weakest points are identified and recommendations are given on how to improve these.

All the steps executed in this research are displayed in the figure below:

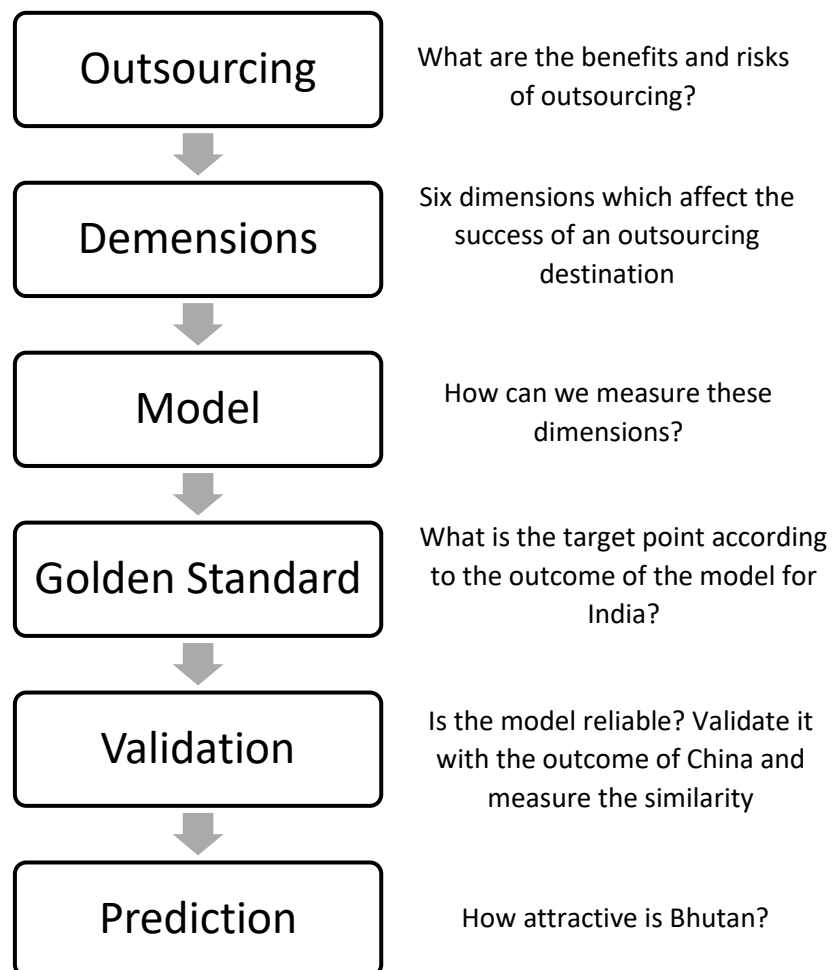


Figure 1.2: Steps of execution

2. REVIEW OF LITERATURE

2.1. Definition of Outsourcing

The term outsourcing could be described, in the simplest form, as the process of contracting a business function to someone else. Or it denotes as the continuous procurement of services from a third party, making use of highly integrated processes, organization models and information systems. But it's most frequently defined as the transmission of activities and processes previously conducted internally to an external third party (Ellram & Billington, 2001).

Reducing the expenses of the company is an idea that never loses its appeal. The opportunity to have less expensive but well trained labor has led companies to look further than their own borders. In recent statistics it shows that the popularity of IT outsourcing across borders is becoming a trend. In 2014 A.T. Kearney found that the world of services outsourcing has changed intensely since they have published a previous document about outsourcing in 2004 (A.T. Kearney, 2011).

“What was then an emerging phenomenon that seemed to have great potential is now a natural element of corporate services supply chain. The industry has grown significantly and, in many cases, exceeded expectations from the early days.” (A.T. Kearney, 2004)

2.1.1 Categories of Outsourcing

Outsourcing can be distinguished in three different categories. In Business Process Outsourcing (BPO), a particular process task is outsourced. This kind of outsourcing work could be either front office or back office. Typical front office work is customer related work like marketing and technical support via the telephone. Examples of BPO are web designing and development, call centers, marketing, data entry, proof reading and editing, book keeping and business consultancy (Rose India).

In a recent study it shows that traditional outsourcing is under threat. A.T. Kearney states that offshoring is still standing strong, but the multi-

year contracts that involve outsourcing are not as popular anymore. This is mainly about maintaining custom code, which requires a number of employees standing standby all the time.

Such services require that outsourcers combine BPO services with cloud-based technology, enabling customers to outsource entire business processes and only pay for the information they access or use. (A.T. Kearney, 2010)

In Knowledge Process Outsourcing (KPO), work is achieved which needs greater levels of participation from the workers. More advanced levels of research, analytical and technical skills are needed. Decisions are also made on a higher level than with BPO. Examples of KPO are pharmaceutical research, animation and simulation, legal services, content writing and development. This sector of outsourcing is not as old and mature as BPO (Rose India).

Last but not least Information Technology Outsourcing (ITO). ITO is outsourcing of computer or Internet related work, such as programming. Typical countries for ITO are India and China (Rose India).

2.2. Benefits of Outsourcing

When outsourcing started to become popular amongst companies, the primary reason was to reduce the costs (Belcourt, 2006). Nowadays outsourcing has become a lot more tempting and interesting thanks to a large number of reasons (The Outsourcing Institute). There are literally numerous of benefits for outsourcing, but for ITO the most important reasons are listed below. These are mostly from the viewpoint of an organization.

Cost reduction

In most cases the decisive factor is the cost reduction. With the economic crisis it could be a wise decision to move business to a place where the price of labor is more attractive. But you should keep in mind

that outsourcing does not cut in your expenses immediately, especially when offshoring (Overby, 2003). In a recent Outsourcing Institute survey, companies reported that on average they saw a 9% reduction in costs through outsourcing.

“The vendors say you can throw it over the wall and start saving money right away. You have to build in up to a year for knowledge transfer and ironing out cultural differences.” – (Overby, 2003)

Another component of cost savings would be tax benefits. Different countries handle different amounts of tax on products. This is also a huge advantage for cost reduction when this applies to an organization.

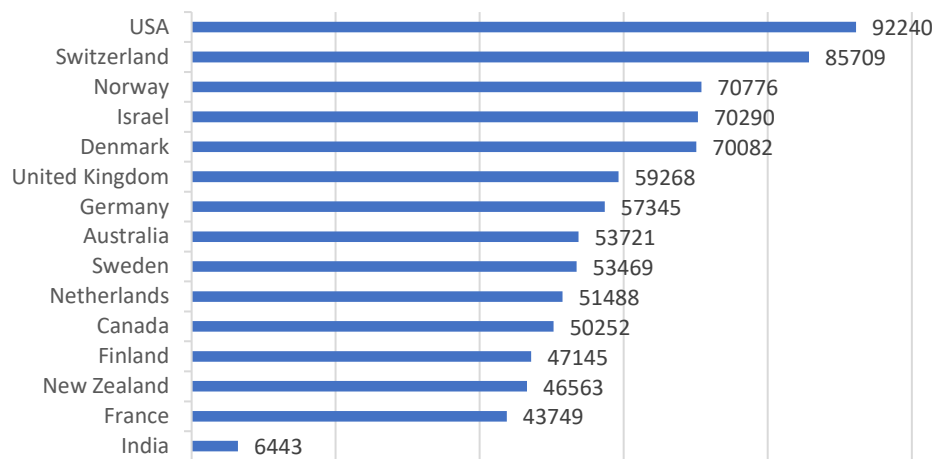


Figure 2.1: Wages for various countries (in USD)

Focus on main business

The strategic part about outsourcing is to outsource your non-core business tasks only. This way you keep your focus and full control on the important tasks of your organization. With focusing on core-business only you will immediately reduce the risk of brain draining. Brain draining is the term for losing knowledge, in this case within your company.

“The most time consuming routine tasks can also be outsourced. Especially when some tasks within the company are seen as ‘difficult to

manage', outsourcing can remove or minimize a function that is considered as problematic" (Jurison, 1995).

Outsourcing reduces the need to invest capital funds in non-core business functions; this makes capital funds more available for core business (The Outsourcing Institute).

Access to skilled workforce and talents

The journey of finding skilled resources is one of the biggest challenges for companies. Offshoring offers IT companies access to a skilled workforce. Side advantages are lower labor costs and of course the quantity of the skilled workforce. Having access to a group of engineers, ready to work, is very important, especially in the software development field.

Companies are more likely to establish a branch in India or China, instead of the USA. When an organization is in immediate need of a large number of engineers, they have more chance of finding these in India and China than in the USA. In other words, it is important to always have access to a large skilled group of people ready for the job. This is what they call one-time application. Those are applications that need to be developed or modified for only a specified time which require a high manpower resource at that time. For this organizations need to do a lot of work in a relatively short period of time. This is expensive and outsourcing could be one of the best solutions in this situation.

High availability

In many researches high availability is referred by the term 'follow-the-sun'. The idea is to have 24/7 continuous operations. To address higher availability for customer service, offshoring towards another continent is a strategic decision (Djavanshir, 2005).

Reducing the time, it takes to complete a project is something every company wishes for. With offshoring in a different time zone, you will have employees working around the clock. Taking advantage of this time difference will reduce the time required to complete projects.

Sharing risks

The effects of outsourcing on companies are:

- Becoming more flexible;
- More dynamic;
- Able to change themselves to meet changing opportunities.

Outsourcing certain components of your business processes help the organization to shift responsibilities to the outsourced organization. The outsourced organization is in most cases the specialist and thus should be able to plan those risks factors better.

On the other hand the outsourced organization should be able to meet the growth requirements. It will be very unlikely that they will have a bunch of experienced people on demand. Choosing your partner in outsourcing will be an important and strategic decision; you will be sharing risks, strategy and obviously also your goals.

2.3. Risks of Outsourcing

There are a lot of risks associated with outsourcing. If an organization decides that they want to outsource, they must choose wisely where they are going to outsource their work. A company must take all the risks in account that they could face during this period of time.

Outsourcing tends to generate strong emotions among both information system professionals and general managers (Earl, 1996). There is a lot of literature about 'how to do it'. This describes what is the best way to implement outsourcing, such as managing contracts, managing relationships and what type of outsourcing you should consider.

“Are the benefits of outsourcing so great that the risks are worth managing? Or are the risks so manageable that the benefits are worth having – a sort of risk/return trade-off?” (Earl, 1996).

Since not everybody is that fond of outsourcing, there are researches about decision models whether to insource or to outsource. Jurison has found a way to calculate this. The basic variables in this model are cost

and risk. The relationship between these two variables is shown in the figure below, costs versus the level of risk (Jurison, 1995).

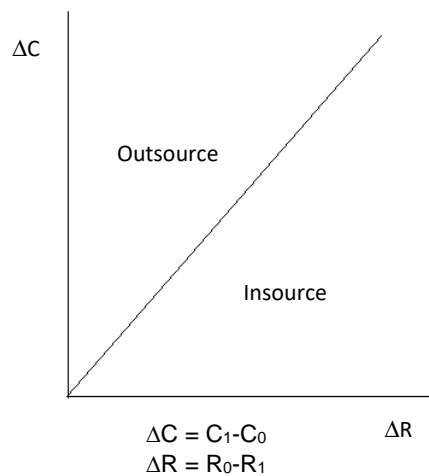


Figure 2.2: Risk and return model for IT outsourcing decision

This risk analysis is a decision model for an organization. It is not possible to make the choice on these factors alone. There are definitely more factors involved when making the choice of outsourcing.

The risks attached to outsourcing for an organization can be categorised as follows:

Hidden costs

One of the most important reasons to outsource is to reduce the costs, but the risk of hidden costs is perhaps the most dangerous one. Most of the time companies underestimate the setup costs, redeployment costs, relocation costs, longer-than-expected costs and international travel expenses.

“We never anticipated the management resources and time – and thus cost – that we have had to put in.” (Earl, 1996).

Possibility of weak management

Excellent management is a must within an organization when it is outsourcing its activities. When the process is initiated, it is crucial to have good management and especially management that knows how to manage IT business.

When a company already does a poor job on managing within their own company, then it is probably a bad plan to start outsourcing. Managing IT work on an external party is an even more difficult job. In other words, to reduce the risk of poor management a company must be capable of managing the IT business in-house. When this is not the case they should simply hire capable IT management.

Besides the staff, there is the risk of inexperienced staff. Even when the labor is cost cutting, it is possible that the new hired staff on the other side of the world is not able to produce the same quality. If they take up twice as much time for the same work, it is safe to say that it's not worth the effort and money.

Miscommunication

It could be the case when English is not the native language of the country where you are outsourcing. This form risks in the way of communication, paper work and agreements.

Business uncertainty

When the organization decides to outsource, and their only reason is to save costs, they talk about business uncertainty. This could turn out badly if they decide to outsource all of their IT work because it is their highest cost centre. This works on a short-term basis, but in the long run they will miss out on their knowledge within the company.

Cultural differences

There are a lot of issues that happen frequently while outsourcing, many of these relate to problems because of cultural differences. It is also said that cultural differences are one of the biggest reasons why offshore outsourcing deals fail or run into problems (Kvedaraviciene & Boguslauskas, 2010).

Classic key issues in outsourcing relations are:

- Directness of communication;
- Native language differences;

- Hierarchy and status;
- Decision making;
- Individual vs. group;
- Time;
- Management style.

Political issues

The political situation could be problematic for outsourcing business (van der Linden & Hengeveld, 2008). When the political system in the country is not stable it could cause a lot of problems. Policies can also play a huge role, for example the censorship in China.

Poor infrastructure

When the company is on the other side of the world, it's possible that the communication between both parties is not going smoothly. This could occur because of a number of reasons.

Unstable Internet connections could interfere with the communication even more. When you don't want to have high costs on phone calls to the other side of the globe, there are simple and cheap solutions like Skype, E-Mail and video conferencing.

In the early 1980s India had a very low-quality infrastructure concerning telecommunications. They targeted this problem with the introduction of the satellite technology to establish connections with their foreign customers (Carmel, 2003).

In the table below advantages are aligned with their corresponding risk:

Table 2.1: Outsourcing Advantages vs Risks

| Advantage | Risk |
|--|-----------------------------|
| Cost saving | Hidden costs |
| Technical feasibility | Poor infrastructure |
| Flexibility | Different time zones |
| More Quality | Deficient quality |
| Advantage derived from entering the market | Problems of National nature |
| More efficient market | More unemployment |

3. THEORETICAL FRAMEWORK

3.1. The Six Dimensions

The six dimensions have been identified based on which the model is created. All these dimensions have a great influence while making the decision for outsourcing. In other words, what factors are important and critical conditions for a country to be an IT outsourcing provider? Based on the research and all the information, six dimensions have been put together.

3.1.1. Knowledge

The first dimension is knowledge and probably the top dimension in outsourcing. Even if the costs of labor is attractive, without any educated and experienced workforce it is still a waste of money.

“Education is the most powerful weapon which you can use to change the world.” – Nelson Mandela

This dimension recognizes two different branches:

- Educational system;
- Quality of the experience.

It is a burden in efficiency, time and cost when your own employees have more knowledge and experience than your future employees across borders. One of the outsourcing reasons is the search for greater knowledge and also in larger quantities. Countries like India and China are perfect examples of this, because of their immense numbers of inhabitants.

With a fresh and large pool of graduates every year in a less developed country, the danger exists that they will find jobs across borders for a way larger payroll than in their own country. People tend to leave, this phenomenon on a much higher level is called brain drain.

A major indicator of quality is whether or not a supplier has quality certification. The government believes that this problem will be partly

addressed by its education and training measures, but its initiative is to encourage firms to seek quality certification (Qu & Brocklehurst, 2003).

3.1.2. Culture

The second dimension and often underestimated factor in outsourcing is culture. The outsourcer must consider that cultural differences can be significant in the success of the sourcing. Particular points are norms and values, daily habits and of course religion.

Culture is more often a source of conflict than of synergy. Cultural differences are a nuisance at best and often a disaster. (Hofstede, Hofstede, & Minkov, 2010)

It is critical that both parties realize the critical differences between their cultures. Particularly the outsourcer, since they are the visitors in another country.

The cultural differences reflect on the work floor and therefore both parties should learn each other's culture to get one step closer to successful outsourcing. With higher values of PDI it indicates an increased fear of consequences and communication gap. In fact, two of the three survey questions used by Hofstede for measuring PDI were related to employees' fear of disagreeing with their bosses and the latter's autocratic behaviour (Hofstede, Hofstede, & Minkov, 2010).

3.1.3. Communication

The third dimension is communication. When you are outsourcing many aspects should be taken into account. First there should be occasional meetings, this could be done using Skype or any other online platform. This comes in handy when you have to discuss some topics with someone on the other side of the world. Although Internet meetings are not enough, there must be face-to-face meetings once in a while.

In the communication dimension, Internet, language and the time difference play big roles. The language creates a lot of challenges for both parties. Misunderstandings are crucial while outsourcing; bad communication causes difficulties and is more time-consuming.

Therefore, conference calls take longer, information could be misinterpreted and email volume increases.

Even worse, poor communication is one aspect of any outsourcing relationship that will doom it to failure. From a conducted survey in 2004, it appears that as many as a quarter of the reasons that relationships between the parties involved are ending due to poor communication (16%) and cultural differences (9%) (Outsourcing Center, 2004).

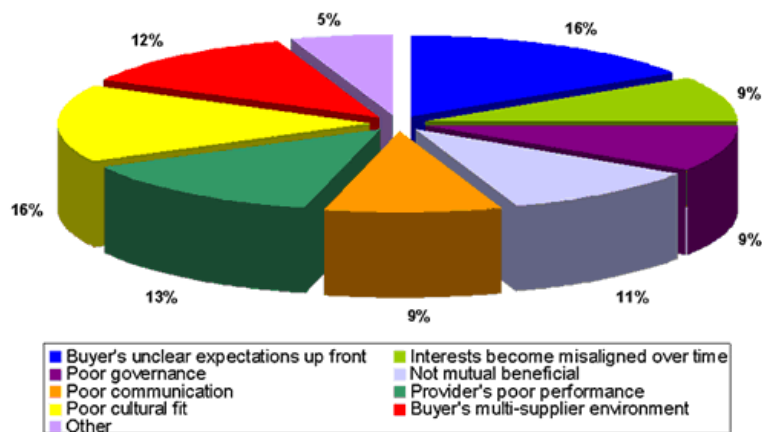


Figure 3.1: Most Frequent Cause of Relationship Failures

As previously stated, online meetings are not sufficient enough, therefore face-to-face meetings are a must when outsourcing across borders. Successful outsourcing requires intense face time during the launch phase and regularly thereafter to establish the rules of engagement and maintain the relationship.

For these frequent face-to-face meetings, the costs are increased, as you and the offshore supplier must make long and expensive trips to and from. These costs are all included in the hidden costs risk that is overseen by many managers as they start outsourcing. These costs include actual travel-related expenses and reduced productivity caused by the absence of your employees. Unwillingness to invest these extra costs is a recipe for disaster. Nonetheless the travel connection between both countries should therefore be in good condition e.g. direct-lines.

With communication, the time differences between these countries could work as an advantage but also as a disadvantage.

3.1.4. Infrastructure

An important role of government is to increase economic capacity by improving quality and efficiency of public infrastructure and utilities necessary to business operation. (Egger & Falkinger, 2003).

The fourth dimension is infrastructure. Especially when offshoring, when companies are settling overseas, a decent infrastructure is necessary. The term infrastructure can be interpreted as e.g. the network of roads, public transport, aviation, water, electricity and the Internet connection. But in our scope, the main points of interest are the stability and speed of the Internet connection, landlines and mobile networks and last but not least the electricity network. The electricity is of much importance, without electricity there is no Internet and telephone, so the communication channel with your offshored branch is gone.

3.1.5. Economy

Both developed and developing countries are using outsourcing as a global vehicle to attract investment and boost their economy. Therefore, we must align our economic strategy with world's economies through outsourcing. (Ukokobili, 2010).

The fifth dimension is economy. Outsourcing has helped numerous of countries to have a great growth in their economy. Especially India, China and the Philippines. The global outsourcing industry in 2010 was worth more than 1 trillion dollars. This insanely large amount of money has a great source in India, as their market is capturing fifty billion dollars and China around fifteen billion dollars (Leiber, 2010).

3.1.6. Government

The last dimension is government. First of all, the need for political stability is very important (van der Linden & Hengeveld, 2008). When this is not the case it will cause problems concerning maintaining

contracts and stable investments. The differences in law and regulations can also complicate the relationship between both parties and even become risky (Gonzalez, Gasco, & Llopis, Information Systems Offshore Outsourcing: A Descriptive Analysis, 2006).

The openness of the government for investments in their country is of critical importance. When the government does not support these actions, many projects are doomed to fail. With openness, censorship is important as well. For example, China has a strict policy on censorship, this could be a key issue in your outsourcing business (Alon, Herbert, & Munoz, 2007).

But perhaps the most important and crucial role for the government dimension is their position and viewpoint on outsourcing and foreign investments. By altering the licensing and creating possibilities for starting companies, the growth of outsourcing can increase.

3.2. Measuring the Six Dimensions

The six dimensions discussed above are the bases of our model. The model exists of a scoring system for each dimension.

The six dimensions determined before must be measured. The scale set up exists of three points. The grouping is done based on sources and in extreme conditions estimation is given. The scale is from zero to one.

Table 3.1: Measurement Scale for the Model

| Score | Description |
|--------------|---------------------------------|
| 0.00 | Needs improvement |
| 0.50 | Not bad, but certainly not good |
| 1.00 | Desirable |

The measurement system will use this 3-point scale. Since every dimension must be measurable, it contains measuring elements.

Before the measuring system is usable, all components are defined and shown how we have provided them with a score from the scale above. It is possible that a defined measuring element must be scored based on a few measurable facts. All the dimensions with their corresponding measuring elements are given below

I. Knowledge Dimension

Table 3.2: Components of knowledge dimension

| S.No. | Components |
|-------|------------------------------|
| 1 | Quantity of people available |
| 2 | Skilled workforce |
| 3 | Students and graduates |

i. Quantity of people available

The quantity of people available refers to the quantity of unemployed people that are active in this field. This will be measured by the following elements:

- Unemployment rate (in %);
 - 0.00: < 4
 - 0.50: >= 4 and < 10
 - 1.00: >=10
- Population growth (in %);
 - 0.00: <= 0.20
 - 0.50: > 0.20 and <= 1.00
 - 1.00: > 1.00
- Life expectancy (in years);
 - 0.00: <= 50
 - 0.50: > 50 and <= 70
 - 1.00: > 70

ii. Skilled workforce

There is a huge need of skilled workforce. The workforce contains all job functions, from software developer to management. This will be measured by the following elements:

- Employment rate (in %);
 - 0.00: ≤ 40
 - 0.50: > 40 and ≤ 80
 - 1.00: > 80
- Literacy (in %);
 - 0.00: ≤ 75
 - 0.50: > 75 and ≤ 90
 - 1.00: > 90

iii. Students and graduates

The future will be in the hands of new graduates; therefore, the flow of new skilled information technology students guarantees long-term orientation. This will be measured by the following elements:

- Number of universities
 - 0.00: ≤ 100
 - 0.50: > 100 and ≤ 500
 - 1.00: > 500
- Number of graduates every year;
 - 0.00: $\leq 2,000$
 - 0.50: $\geq 2,001$ and $\leq 14,999$
 - 1.00: $\geq 15,000$

II. Culture Dimension

Table 3.3: Components of culture dimension

| S.No. | Components |
|-------|-----------------------|
| 1 | Power distance |
| 2 | Masculinity |
| 3 | Individualism |
| 4 | Uncertainty avoidance |
| 5 | Long term orientation |
| 6 | Indulgence |

i. Power distance (PDI)

The power distance is all about hierarchy. It expresses the attitude of the people towards the cultural differences.

“Power distance is defined as the extent to which the less powerful members of institutions and organizations within a country expect and accept that power is distributed unequally.”

- Power distance value (PDI);
 - 0.00: ≥ 80
 - 0.50: ≤ 79 and ≥ 61
 - 1.00: ≤ 60

ii. Individualism (IDV)

Individualism reflects if the people's self-image is defined in terms of I or We. In typical individualist societies people are supposed to look after themselves and their family only. The opposite of this is collectivism. In collectivist societies people belong to a group, whether this is a tribe, nation, sex or family.

“The fundamental issue addressed by this dimension is the degree of interdependence a society maintains among its members.”

- Individualism values (IDV);
 - 0.00: ≤ 25
 - 0.50: ≥ 26 and ≤ 49
 - 1.00: ≥ 50

iii. Masculinity (MAS)

Masculinity contains two opposites, with a high score this dimension points towards masculine. That means that the society is driven by competition, achievement and success. When a country scores low on this pillar it means that it is feminine. This means that the dominant values in society are caring for others and quality of life.

“The fundamental issue here is what motivates people; wanting to be the best or liking what you do.”

- Masculinity values (MAS);
 - 0.00: ≥ 70
 - 0.50: ≤ 69 and ≥ 31
 - 1.00: ≤ 30

iv. **Uncertainty avoidance (UAI)**

Uncertainty avoidance has to do with the way that a society deals with the fact that the future is unknown.

“The extent to which the members of a culture feel threatened by ambiguous or unknown situations and have created beliefs and institutions that try to avoid these is reflected in the UAI score.”

- Uncertainty avoidance values (UAI);
 - 0.00: ≤ 30
 - 0.50: ≥ 31 and ≤ 49
 - 1.00: ≥ 50

v. **Long-term orientation (LTO)**

It is the extent to which a society shows a realistic future orientation rather than a short-term point of view.

- Long-term orientation values (LTO);
 - 0.00: ≤ 30
 - 0.50: ≥ 31 and ≤ 59
 - 1.00: ≥ 60

vi. **Indulgence**

Indulgence reflects the degree to which people try to control their desires and impulses, based on the way they are raised.

- Indulgence values;
 - 0.00: ≤ 25
 - 0.50: ≥ 26 and ≤ 59
 - 1.00: ≥ 60

III. Communication Dimension

Table 3.4: Components of communication dimension

| S.No. | Components |
|-------|--------------|
| 1 | Availability |
| 2 | Travel |
| 3 | Language |

i. High availability

High availability refers to the number of productive hours per day that can be covered with the advantage of time difference. This will be measured by the following elements:

- Time difference (in hours);
 - 0.00: > 5
 - 0.50: ≥ 2 and ≤ 5
 - 1.00: < 2
- Productive working hours per day (in hours);
 - 0.00: ≤ 6
 - 0.50: > 6 and ≤ 14
 - 1.00: > 14

ii. Travel

Good cooperation requires face-to-face meetings; the time and travel costs for these meetings should be calculated in the hidden costs. This will be measured by the following elements:

- Travel time (in hours);
 - 0.00: ≥ 16
 - 0.50: < 16 and ≥ 9
 - 1.00: < 9
- Travel costs (in \$).
 - 0.00: $\geq 3,000$
 - 0.50: < 3,000 and > 2,000
 - 1.00: $\leq 2,000$

iii. Language

It is important that both parties understand each other while communicating. This is greatly dependent on the spoken language. This will be measured by the following element:

- English tongue;
 - 0.00: No
 - 0.50: Yes, but not native language
 - 1.00: Native language or very proper English

IV. Infrastructure Dimension

Table 3.5: Components of infrastructure dimension

| S.No. | Components |
|-------|-------------|
| 1 | Internet |
| 2 | Electricity |
| 3 | Telephone |

i. Internet

The infrastructure for Internet connections is of great importance when operating an information technology business. There should be reasonable Internet for several purposes so that even on long-distance the work cooperation is possible. This will be measured by the following elements:

- Internet speed (in mbps);
 - 0.00: ≤ 2.00
 - 0.50: > 2.00 and < 10.00
 - 1.00: ≥ 10.00
- Internet connections (in %);
 - 0.00: ≤ 60
 - 0.50: > 60 and ≤ 85
 - 1.00: > 85

- Average Internet costs (in \$).
 - 0.00: > 40
 - 0.50: <= 40 and > 20
 - 1.00: <= 20

ii. Electricity

The infrastructure of power decides whether IT capitals are safe for power outages. It appears that even in an IT capital in India these outages occur often.

“That an IT-enabled Hyderabad plunges into darkness each time it rains, or even drizzles.” (Times of India, 2010).

This will be measured by the following elements:

- Power outages in firms in a typical month;
 - 0.00: >= 10
 - 0.50: < 10 and >= 2
 - 1.00: < 2
- Time of restoring power outage (in minutes)
 - 0.00: >= 90
 - 0.50: < 90 and >= 20
 - 1.00: < 20

iii. Telephone

Communication channels within the outsourcing country are very important. Are the phone lines in good condition and does it provide coverage over the whole country? This is also important for contacts overseas. This will be measured by the following elements:

- Telephone lines (in %);
 - 0.00: <= 50
 - 0.50: > 50 and <= 85
 - 1.00: > 85
- Mobile phone connections (in %);
 - 0.00: <= 50
 - 0.50: > 50 and <= 85
 - 1.00: > 85

- Mobile phone coverage;
 - 0.00: No coverage to very little coverage
 - 0.50: Ok coverage
 - 1.00: Good coverage

V. Economy Dimension

Table 3.6: Components of economy dimension

| S.No. | Components |
|-------|--------------------------|
| 1 | GDP |
| 2 | Unemployment rate |
| 3 | Labor costs |
| 4 | Investments by companies |

i. GDP growth

The title of this measuring element speaks for itself. This makes sure it has a steady and growing economy. This will be measured by the following element:

- GDP per capita (in \$);
 - 0.00: $\leq 1,000$
 - 0.50: $> 1,000$ and $\leq 3,000$
 - 1.00: $> 3,000$
- GDP growth per year (in %);
 - 0.00: ≤ 5
 - 0.50: > 5 and ≤ 10
 - 1.00: > 10

ii. Unemployment rate

The unemployment rate has impact on the economy of the country.

This will be measured by the following element:

- Unemployment rate (in %);
 - 0.00: < 4
 - 0.50: ≥ 4 and < 10
 - 1.00: ≥ 10

iii. Labor costs

The most common reason for outsourcing is cutting back on the expenses, labor costs is the average wage for an employee in the IT sector. This will be measured by the following elements:

- Average annual salary (in \$);
 - 0.00: ≥ 2000
 - 0.50: < 2000 and > 800
 - 1.00: ≤ 800
- Average working hours per week;
 - 0.00: ≤ 35
 - 0.50: > 35 and ≤ 45
 - 1.00: > 45

iv. Investments

Investments are required for an economy to grow. Various companies in India and China have done this. This will be measured by the following element:

- Market shares of IT companies;
 - 0.00: No investments from foreign countries
 - 0.50: Few investments
 - 1.00: Reasonable to many investments

VI. Government Dimension

Table 3.7: Components of government dimension

| S.No. | Components |
|-------|--|
| 1 | Political Stability |
| 2 | Transparent & Investment friendly policies |
| 3 | Reducing licensing requirements |
| 4 | Promoting investments from outsiders |

i. Political stability

The political stability of the government can affect the outsourcing business. This will be measured by the following element:

- Stability;
 - 0.00: Not stable
 - 0.50: Has problems
 - 1.00: Stable

ii. **Transparent & investment friendly policies**

The government should formulate and implement more transparent and investment friendly policies. A perfect example is that India is opening up their markets for foreign companies. This will be measured by the following elements:

- Investments possible from outsiders;
 - 0.00: No foreign investments possible
 - 0.50: Foreign investments possible, on a small scale
 - 1.00: Foreign investments approved
- Foreign establishments;
 - 0.00: Few to almost none
 - 0.50: Medium
 - 1.00: Plenty of establishments

iii. **Reducing licensing requirements**

Many countries have made reforms that has reduced licensing requirements and has made foreign technology accessible. This will be measured by the following elements:

- License requirements;
 - 0.00: License required
 - 0.50: Reduced licensing
 - 1.00: No licensing
- Restrictions on investments;
 - 0.00: Restrictions on investments
 - 0.50: Few restrictions
 - 1.00: No restrictions

iv. Promoting investments from outsiders

The promotion of investments from outsiders will help the ITO/BPO industry enormously. This will be measured by the following element:

- Promoting of investments;
 - 0.00: No promoting of investments
 - 0.50: Few promoting is done
 - 1.00: Promoting is done on regular basis

4. LEARNING SET - INDIA

The research methodology uses a learning, a validation and a prediction-set. For the learning-set the country India is chosen. The reason for choosing India as a learning set is that it has consistently remained the top choice as an outsourcing destination for all the developed countries for many years now. The model, with the dimensions and their measuring elements, are used here.

Every dimension has its own table with the components and their measuring elements. The data shown in the tables below are taken from various sources and when necessary estimations have been made based on the found sources.

Table 4.1: Measuring the Knowledge Dimension of India

| Components of Knowledge dimension | Value | Score |
|--|--------------|--------------|
| 1. Quantity of people | | |
| • Unemployment rate (in %) | 3.6 | 0.00 |
| • Population growth rate (in %) | 1.148 | 1.00 |
| • Life expectancy (in years) | 68.33 | 0.50 |
| | | 0.50 |
| 2. Skilled workforce | | |
| • Employment rate (in %) | 53.5 | 0.50 |
| • Literacy (in %) | 72.1 | 0.50 |
| | | 0.50 |
| 3. Students and graduates | | |
| • Number of Universities | 819 | 1.00 |
| • Number of IT graduates every year | 5,50,000 | 1.00 |
| | | 1.00 |
| Average | | 0.66 |

Table 4.2: Measuring the Culture Dimension of India

| Components of Culture dimension | Value | Score |
|--|--------------|---------------------|
| 1. Power Distance | 77 | 0.50 0.50 |
| 2. Masculinity | 56 | 0.50 0.50 |
| 3. Individualism | 48 | 0.50 0.50 |
| 4. Uncertainty avoidance | 40 | 0.50 0.50 |
| 5. Long term orientation | 51 | 0.50 0.50 |
| 6. Indulgence | 26 | 0.50 0.50 |
| Average | | 0.50 |

Table 4.3: Measuring the Communication Dimension of India

| Components of Communication dimension | Value | Score |
|--|-------------------|---------------------|
| 1. Availability | | |
| • Time difference (in hours) | 4.5 | 0.50 |
| • Productive working hours per day | 9 | 0.50 0.50 |
| 2. Travel | | |
| • Travel time (in hours) | 14 | 0.50 |
| • Travel costs (in \$) | 1800 | 1.00 0.75 |
| 3. Language | | |
| • English Tongue | Proper English | 1.00 1.00 |
| Average | | 0.75 |

Table 4.4: Measuring the Infrastructure Dimension of India

| Components of Infrastructure dimension | Value | Score |
|---|--------------|--------------|
| 1. Internet | | |
| • Internet speed (in mbps) | 6.5 | 0.50 |
| • Internet connections (in %) | 29.5 | 0.00 |
| • Average internet costs (in \$) | 15 | 1.00 |
| | | 0.50 |
| 2. Electricity | | |
| • Power outages in firms in a typical month | 13.8/0.1/0.4 | 0.00 |
| • Time of restoring power outage (in mins) | 70 | 0.50 |
| | | 0.25 |
| 3. Telephone | | |
| • Telephone lines (in %) | 6.34 | 0.00 |
| • Mobile phone connections (in %) | 88 | 1.00 |
| • Mobile phone coverage | Good | 1.00 |
| | | 0.66 |
| Average | | 0.47 |

Table 4.5: Measuring the Economy Dimension of India

| Components of Economy dimension | Value | Score |
|--|------------------|--------------|
| 1. GDP growth | | |
| • GDP per capita (in \$) | 1974.76 | 0.50 |
| • GDP growth per year (in %) | 6.5 | 0.50 |
| | | 0.50 |
| 2. Unemployment | | |
| • Unemployment rate (in %) | 3.6 | 0.00 |
| | | 0.00 |
| 3. Labor costs | | |
| • Average annual salary (in \$) | 616 | 1.00 |
| • Average working hours per week | 48 | 1.00 |
| | | 1.00 |
| 4. Investments | | |
| • Market shares of IT companies | Many investments | 1.00 |
| | | 1.00 |
| Average | | 0.62 |

Table 4.6: Measuring the Government Dimension of India

| Components of Government dimension | Value | Score |
|--|-----------------------|---------------------|
| 1. Political Stability | | |
| • Stability | Stable | 1.00 1.00 |
| 2. Transparent and Investment friendly policies | | |
| • Investments possible from outsiders | Good | 1.00 |
| • Foreign establishments | investments Plenty | 1.00 1.00 |
| 3. Reducing licensing requirement | | |
| • License requirements | Reduced | 0.50 |
| • Restrictions on Investments | No restrictions | 1.00 0.75 |
| 4. Promoting Investments from outsiders | | |
| • Promoting of investments | Few | 0.50 0.50 |
| Average | | 0.81 |

4.1 India – The Golden standard

Every dimension of India has been measured and the results are displayed. These results represent the ideal situation, or the golden standard. The golden standard originates from the popularity of India as outsourcing country. The results of India are a goal for other countries, because of its raving success as outsourcing provider.

Table 4.7: Outcome of the Model for India

| | Knowledge | Culture | Communication | Infrastructure | Economy | Government |
|--------------|-----------|---------|---------------|----------------|---------|------------|
| India | 0.66 | 0.50 | 0.75 | 0.47 | 0.62 | 0.81 |

These numbers are not as helpful until they are visualized. A radar chart is effective when displaying data using multiple variables starting from the same point. It has the ability to immediately show the strongest and

weakest points. The weakest dimensions are close to the center and strongest dimensions are at the outskirts of the chart.

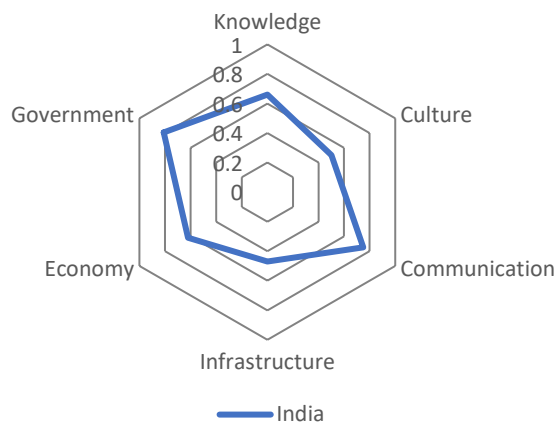


Figure 4.1: Radar Chart for India

The dimensions that stand out in the radar chart are explained below.

Government

The government dimension has received the highest score. It definitely has a positive impact on other dimensions because the government eventually decides what is best for the country. So, when the government dimension is strong, other dimensions will gain from this strength.

Communication

Communication is the second dimension that stands out. With the second highest score from all dimensions it shows that communication is critical in the outsourcing process. According to a survey from the Outsourcing Center, most outsourcing failures are due to problems in communication (Outsourcing Center, 2004).

Infrastructure

In contradiction to the two dimensions described above, infrastructure received the lowest score. With a score of only 0.47, it leaves a 0.53 margin for improvements. Infrastructure is extremely important for communication purposes and is very crucial in the information technology industry.

5. VALIDATION SET - CHINA

Validation set helps to test the reliability of the model. To validate the model, we need a country that is close to the success of India. According to various sources China is the country closest to the success of India (A.T. Kearney, 2011).

Both the countries differ each other in various ways but both are doing tremendously good as outsourcing countries. This makes it an ideal country for validating the model.

At the end, the cosine similarity is calculated between the results of India and China. If the result has a high similarity, the model is reliable because China is indeed successful.

Every dimension has its own table with the components and their measuring elements. The data shown in the tables below are taken from various sources and when necessary estimations have been made based on the found sources.

Table 5.1: Measuring the Knowledge Dimension of China

| Components of Knowledge dimension | Value | Score |
|-------------------------------------|----------|-------------|
| 1. Quantity of people | | |
| • Unemployment rate (in %) | 4.6 | 0.50 |
| • Population growth rate (in %) | 0.541 | 0.50 |
| • Life expectancy (in years) | 76.11 | 1.00 |
| | | 0.66 |
| 2. Skilled workforce | | |
| • Employment rate (in %) | 75.1 | 0.50 |
| • Literacy (in %) | 96.4 | 1.00 |
| | | 0.75 |
| 3. Students and graduates | | |
| • Number of Universities | 2914 | 1.00 |
| • Number of IT graduates every year | 5,01,000 | 1.00 |
| | | 1.00 |
| Average | | 0.80 |

Table 5.2: Measuring the Culture Dimension of China

| Components of Culture dimension | Value | Score |
|--|--------------|---------------------|
| 1. Power Distance | 80 | 0.00 0.00 |
| 2. Masculinity | 66 | 0.50 0.50 |
| 3. Individualism | 20 | 0.00 0.00 |
| 4. Uncertainty avoidance | 30 | 0.00 0.00 |
| 5. Long term orientation | 87 | 1.00 1.00 |
| 6. Indulgence | 24 | 0.00 0.00 |
| Average | | 0.25 |

Table 5.3: Measuring the Communication Dimension of China

| Components of Communication dimension | Value | Score |
|--|---------------------|---------------------|
| 1. Availability | | |
| • Time difference (in hours) | 6 | 0.00 |
| • Productive working hours per day | 9 | 0.50 0.25 |
| 2. Travel | | |
| • Travel time (in hours) | 20.5 | 0.00 |
| • Travel costs (in \$) | 2000 | 1.00 0.50 |
| 3. Language | | |
| • English Tongue | Yes, but not Native | 0.50 0.50 |
| Average | | 0.42 |

Table 5.4: Measuring the Infrastructure Dimension of China

| Components of Infrastructure dimension | Value | Score |
|---|--------------|--------------|
| 1. Internet | | |
| • Internet speed (in mbps) | 9.4 | 0.50 |
| • Internet connections (in %) | 53.2 | 0.00 |
| • Average internet costs (in \$) | 13.5 | 1.00 |
| | | 0.50 |
| 2. Electricity | | |
| • Power outages in firms in a typical month | 0.1 | 1.00 |
| • Time of restoring power outage (in mins) | 30 | 0.50 |
| | | 0.75 |
| 3. Telephone | | |
| • Telephone lines (in %) | 42.11 | 0.00 |
| • Mobile phone connections (in %) | 99 | 1.00 |
| • Mobile phone coverage | Good | 1.00 |
| | | 0.66 |
| Average | | 0.64 |

Table 5.5: Measuring the Economy Dimension of China

| Components of Economy dimension | Value | Score |
|--|--------------|--------------|
| 1. GDP growth | | |
| • GDP per capita (in \$) | 8,830.17 | 1.00 |
| • GDP growth per year (in %) | 6.9 | 0.50 |
| | | 0.75 |
| 2. Unemployment | | |
| • Unemployment rate (in %) | 4.6 | 0.50 |
| | | 0.50 |
| 3. Labor costs | | |
| • Average annual salary (in \$) | 1,786 | 0.50 |
| • Average working hours per week | 40 | 0.50 |
| | | 0.50 |
| 4. Investments | | |
| • Market shares of IT companies | Few | 0.50 |
| | | 0.50 |
| Average | | 0.56 |

Table 5.6: Measuring the Government Dimension of China

| Components of Government dimension | Value | Score |
|--|------------------|---------------------|
| 1. Political Stability | | |
| • Stability | Stable | 1.00 1.00 |
| 2. Transparent and Investment friendly policies | | |
| • Investments from outsiders | Good investments | 1.00 |
| • Foreign establishments | Plenty | 1.00 1.00 |
| 3. Reducing licensing requirement | | |
| • License requirements | Reduced | 0.50 |
| • Restrictions on Investments | Few | 0.50 0.50 |
| 4. Promoting Investments from outsiders | | |
| • Promoting of investments | Few | 0.50 0.50 |
| Average | | 0.75 |

5.1 Cosine Similarity

The cosine similarity is a measure of similarity between two vectors. In this case these vectors are of India and China. We measured the cosine of the angle between these two vectors. When the vectors point in the same direction, the vectors are similar. But when the angle is totally different, that means the two vectors are nothing alike.

The cosine similarity is measured using the Euclidean dot product. The equation given below is used.

$$a \cdot b = \| a \| \| b \| \cos\theta$$

$$\text{similarity} = \cos\theta = \frac{A \cdot B}{\| A \| \| B \|} = \frac{\sum_{i=1}^n A_i \times B_i}{\sqrt{\sum_{i=1}^n A_i^2} \times \sqrt{\sum_{i=1}^{n_1} B_i^2}}$$

The cosine similarity between India and China is calculated. Our expectations were high cosine similarity as both the countries are successful outsourcing countries. If the obtained similarity is high, then the model is validated.

Table 5.7: Outcome of the Model for India and China

| | Knowledge | Culture | Communication | Infrastructure | Economy | Government |
|-------|-----------|---------|---------------|----------------|---------|------------|
| India | 0.66 | 0.50 | 0.75 | 0.47 | 0.62 | 0.81 |
| China | 0.80 | 0.25 | 0.42 | 0.64 | 0.56 | 0.75 |

We calculated the cosine similarity using the above formula.

$$\text{India} \cdot \text{China} = 0.66 \times 0.8 + 0.5 \times 0.25 + 0.75 \times 0.42 + 0.47 \times 0.64 + 0.62 \times 0.56 + 0.81 \times 0.75$$

$$\| \text{India} \| = \sqrt{0.66^2 + 0.50^2 + 0.75^2 + 0.47^2 + 0.62^2 + 0.81^2} = 1.5841$$

$$\| \text{China} \| = \sqrt{0.80^2 + 0.25^2 + 0.42^2 + 0.64^2 + 0.56^2 + 0.75^2} = 1.4712$$

$$\text{sim}(\text{India}, \text{China}) = \frac{2.2235}{1.5841 \times 1.4712} = \mathbf{0.95}$$

We used the model to find the values of India which represents the Golden Standard. To achieve high attractiveness, China should score a high similarity with the golden standard. The higher the similarity, the more similar these vectors are. Now China has been measured with the model and the similarity between China and the golden standard is calculated.

India and China have a cosine similarity of 0.95, which is a high cosine similarity. When the similarity is exactly 1, the vectors are exactly the same.

We have now put the results of China in the same chart to see the differences between the values of China and India. The cosine similarity showed that it has high similarity with India, so we can visualize the similarity in the radar chart below.

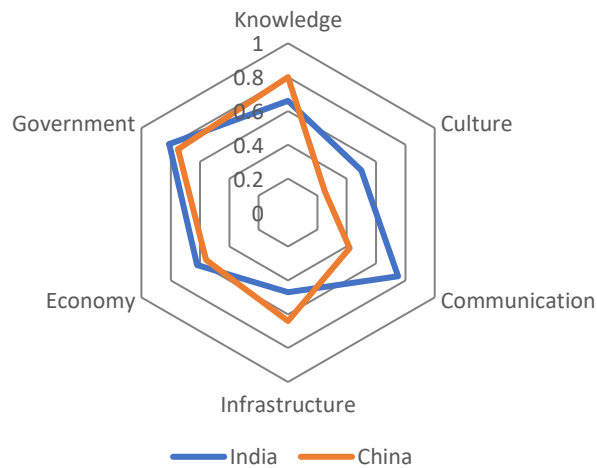


Figure 5.1: Radar Chart with measurements of India and China

We can see that China's knowledge and infrastructure dimensions have higher scores than India and that China has no real peaks in the radar chart. This chart helps to understand which dimensions need improvement to become a successful outsourcing provider.

6. PREDICTION SET - BHUTAN

The last step in the research methodology defines the prediction-set which is China in this case. The model designed is validated as the results of China show a very high cosine similarity with India. For the prediction-set the country Bhutan has been chosen. The reason for choosing Bhutan is that despite being one of the smallest nations of the world in terms of area, it is the fastest growing economy today (Nasdaq, 2017). It lies between the two most populous countries in the world - India and China. This makes Bhutan a strategically important nation.

Every dimension has its own table with the components and their measuring elements. The data shown in the tables below are taken from various sources and when necessary, estimations have been made based on the found sources.

Table 6.1: Measuring the Knowledge Dimension of Bhutan

| Components of Knowledge dimension | Value | Score |
|--|--------------|--------------|
| 1. Quantity of people | | |
| • Unemployment rate (in %) | 2.5 | 0.00 |
| • Population growth rate (in %) | 1.31 | 1.00 |
| • Life expectancy (in years) | 69.8 | 0.50 |
| | | 0.50 |
| 2. Skilled workforce | | |
| • Employment rate (in %) | 58.6 | 0.50 |
| • Literacy (in %) | 64.9 | 0.00 |
| | | 0.25 |
| 3. Students and graduates | | |
| • Number of Universities | 2 | 0.00 |
| • Number of IT graduates every year | 1536 | 0.00 |
| | | 0.00 |
| Average | | 0.25 |

Table 6.2: Measuring the Culture Dimension of Bhutan

| Components of Culture dimension | Value | Score |
|--|--------------|---------------------|
| 1. Power Distance | 94 | 0.00 0.00 |
| 2. Masculinity | 32 | 0.50 0.50 |
| 3. Individualism | 52 | 1.00 1.00 |
| 4. Uncertainty avoidance | 28 | 0.00 0.00 |
| 5. Long term orientation | 43 | 0.50 0.50 |
| 6. Indulgence | 25 | 0.00 0.00 |
| Average | | 0.33 |

Table 6.3: Measuring the Communication Dimension of Bhutan

| Components of Communication dimension | Value | Score |
|--|-----------------|--------------|
| 1. Availability | | |
| • Time difference (in hours) | 4.5 | 0.50 |
| • Productive working hours per day | 8 | 0.50 |
| | | 0.50 |
| 2. Travel | | |
| • Travel time (in hours) | 15 | 0.50 |
| • Travel costs (in \$) | 7000 | 0.00 |
| | | 0.25 |
| 3. Language | | |
| • English Tongue | Yes, not native | 0.50 |
| | | 0.50 |
| Average | | 0.42 |

Table 6.4: Measuring the Infrastructure Dimension of Bhutan

| Components of Infrastructure dimension | Value | Score |
|---|--------------|--------------|
| 1. Internet | | |
| • Internet speed (in mbps) | 2 | 0.00 |
| • Internet connections (in %) | 41.7 | 0.00 |
| • Average internet costs (in \$) | 15 | 1.00 |
| | | 0.33 |
| 2. Electricity | | |
| • Power outages in firms in a typical month | 0.4 | 1.00 |
| • Time of restoring power outage (in mins) | 60 | 0.50 |
| | | 0.75 |
| 3. Telephone | | |
| • Telephone lines (in %) | 21.8 | 0.00 |
| • Mobile phone connections (in %) | 85 | 0.50 |
| • Mobile phone coverage | Ok coverage | 0.50 |
| | | 0.33 |
| Average | | 0.47 |

Table 6.5: Measuring the Economy Dimension of Bhutan

| Components of Economy dimension | Value | Score |
|--|--------------|--------------|
| 1. GDP growth | | |
| • GDP per capita (in \$) | 2887 | 0.50 |
| • GDP growth per year (in %) | 8 | 0.50 |
| | | 0.50 |
| 2. Unemployment | | |
| • Unemployment rate (in %) | 2.4 | 0.00 |
| | | 0.00 |
| 3. Labor costs | | |
| • Average annual salary (in \$) | 450 | 1.00 |
| • Average working hours per week | 48 | 1.00 |
| | | 1.00 |
| 4. Investments | | |
| • Market shares of IT companies | Few | 0.50 |
| | | 0.50 |
| Average | | 0.50 |

Table 6.6: Measuring the Government Dimension of Bhutan

| Components of Government dimension | Value | Score |
|--|---------|---------------------|
| 1. Political Stability | | |
| • Stability | Stable | 1.00 1.00 |
| 2. Transparent and Investment friendly policies | | |
| • Investments from outsiders | Few | 0.50 |
| • Foreign establishments | Few | 0.50 0.50 |
| 3. Reducing licensing requirement | | |
| • License requirements | Reduced | 0.50 |
| • Restrictions on Investments | Few | 0.50 0.50 |
| 4. Promoting Investments from outsiders | | |
| • Promoting of investments | Few | 0.50 0.50 |
| Average | | 0.62 |

6.1 Attractiveness

The cosine similarity between India and China was 0.95. As we know, higher the cosine similarity, higher the chances of a country to become a successful outsourcing provider.

The similarity between India and Bhutan are calculated. All the results are summarized in the below table.

Table 6.7: Measurement of India, China and Bhutan

| | Knowledge | Culture | Communication | Infrastructure | Economy | Government |
|---------------|-----------|---------|---------------|----------------|---------|------------|
| India | 0.66 | 0.50 | 0.75 | 0.47 | 0.62 | 0.81 |
| China | 0.80 | 0.25 | 0.42 | 0.64 | 0.56 | 0.75 |
| Bhutan | 0.25 | 0.33 | 0.42 | 0.47 | 0.50 | 0.62 |

$$\text{India} \cdot \text{Bhutan} = 0.66 \times 0.25 + 0.5 \times 0.33 + 0.75 \times 0.42 + 0.47 \times 0.47 + 0.62 \times 0.5 + 0.81 \times 0.62$$

$$\| \text{India} \| = \sqrt{0.66^2 + 0.50^2 + 0.75^2 + 0.47^2 + 0.62^2 + 0.81^2} = 1.5841$$

$$\| \text{Bhutan} \| = \sqrt{0.25^2 + 0.33^2 + 0.42^2 + 0.47^2 + 0.50^2 + 0.62^2} = 1.2031$$

$$\text{sim}(\text{India}, \text{Bhutan}) = \frac{1.6781}{1.5841 \times 1.2031} = \mathbf{0.88}$$

Using the formula, we found out that India and Bhutan have a cosine similarity of 0.88, which is not a very high cosine similarity as compared to India and China. When the similarity is exactly 1, the vectors are exactly the same. So, we can say that Bhutan has a great potential to become an attractive outsourcing provider if it works on the six dimensions.

Finally, the new data is added into the chart. Previous data still exists in the chart. The outcome from India is considered as the Golden Standard and the outcomes of China and Bhutan show the deviation from the Golden Standard.

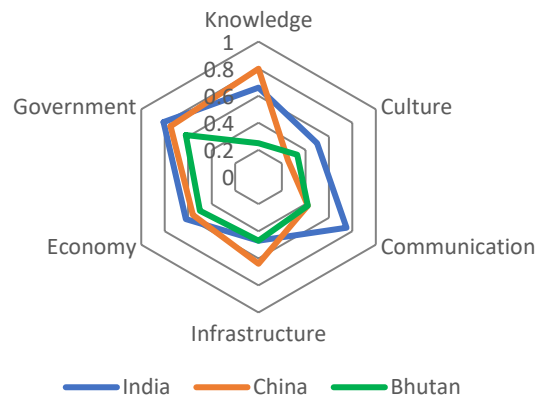


Figure 6.1: Chart showing measurements of India, Bhutan and China

From the above figure, we can see that India has the best score. This is rational as India represents the golden standard. What we can notice from the results of Bhutan is that all dimensions are very weak, except for the infrastructure dimension. This dimension has equal score to that of India's infrastructure dimension.

7. FINDINGS AND RECOMMENDATIONS

- The cosine similarity of Bhutan with India is 0.88 which is not a very low similarity. This means that Bhutan has potential to become an outsourcing country if it works on the dimensions in which it is lacking, especially, knowledge and culture.
- The research also shows that the list of outsourcing countries provided by A.T. Kearney has not much difference in the values of cosine similarity with that of India. Only a small change in the values can make the countries attractive as an outsourcing country.
- Companies of developed countries outsource their business processes to developing countries which reduces huge cost since it is much cheaper to operate the business from developing countries. The outsourcing companies also have a comparative advantage over the currency exchange rate.
- A country is successful as an outsourcing provider if it has similar characteristics that of the golden standard. The final goal for every country is to have the maximum possible score for each dimension.
- The most efficient way to improve the attractiveness is by beginning with the government dimension. This factor has the most impact on other factors. Improving the knowledge and government dimension will help in achieving the desired result.
- Culture is very crucial for outsourcing as it cannot be changed. Cross cultural barriers have resulted in failure of many projects. Therefore, every outsourcing company must carefully look at the culture of the country where they are outsourcing their services.
- Poor communication is a major aspect because of which outsourcing relationships fail. It is very important to ensure that there are proper

communication channels established in the other country and also the time difference should act as a boon and not as a bane.

- Having a literate population is a plus point for any country but they must be competent enough to cater the needs of companies looking for outsourcing.
- Government should have transparent and investment friendly policies, then only foreign investors will feel motivated to outsource their services to other countries. If there are strict rules and regulations and also if it is difficult to get the required licenses, then it demotivates any company.

8. CONCLUSION

The results of Bhutan show that it has a potential to become an outsourcing country if it works on the six dimensions as its cosine similarity with India is not very low. But, except for the Infrastructure dimension, all the dimensions of Bhutan are very weak.

The most important dimension of all is the Government dimension because this dimension has influence on all the other dimensions. Improving this dimension will help in achieving the desired results.

9. LIMITATIONS

- Only one country i.e., China is used as a validation set to validate the designed framework. More countries can be used to validate it.
- The data has been gathered from various sources and when necessary, estimations have been made from the found sources.

10. SCOPE OF FUTURE STUDY

- The research covers only the Information Technology Outsourcing. This could be further extended to cover both Business Process Outsourcing as well as Knowledge Process Outsourcing.
- More countries can be used to validate the designed framework.

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