



## RESEARCH PAPERS IN ECONOMICS AND FINANCE

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# Information demand of foreign labour market from the point of view of Chinese students

**Anna Pilarczyk<sup>1</sup>, Tomasz Naprawski<sup>2</sup>**<sup>1,2</sup> University of Szczecin, Poland

### ABSTRACT

Today people are faced with a huge amount of information. Demand-oriented management of information can resolve this issue. Therefore, the measures that filter this information are the desired solution. One of these measures is information demand analysis, which can be easily used for defining problems on the labour market, where the term of talent import is becoming increasingly important. The main contribution of this study is the analysis of the challenges facing the foreign labour market from the point of view of an employee and an employer and a proposal of an information demand model for strengthening the foreign labour market information system. The information demand model is one of the stages of the development of an information-logistics engine, which ensures that the right information is available in the right location, time and quality.

**Keywords:** information-logistics engine, information demand analysis, information demand model, foreign labour market, demand-oriented management of information.

### 1. Introduction

Every day a huge amount of information is produced, and many people have easy access to a wide range of information, even to the one they do not need at all (Stamer et al., 2016). Therefore, the measures that filter this information are in great demand. One of these measures is information demand analysis, which can be easily used for defining problems on the labour market, where the term of talent import is becoming increasingly important.

The main contribution of this study is the analysis of the challenges facing the foreign labour market from the point of view of an employee and an employer and a proposal of an information demand model for strengthening the foreign labour market information system. The second section describes the terms and basic principles used in our paper, while the next section examines the information demand on the labour market from the point of view of an employee and an employer. With the help of surveys, their problems and potential are explicitly presented and described. Afterward, an information-logistics engine is developed

and analysed. The final section summarises the results of the analysis and outlines future research directions.

The focus of this work is on the goal-oriented management of information for strengthening the labour market information system. Information logistics is a base for the technologies that guarantee the provision of relevant information and their separation from irrelevant information. For this reason, information logistic applications are focusing on the individual needs of the user. A prerequisite for this technology is the information logistics engine, which is responsible for intelligent and automatic information management. The engines integrate the data from various sources and match them with user profiles which describe user information demand (Fraunhofer-Institut, 2004).

### 2. Information demand on the labour market

The goal-oriented management of information is the basis for right decisions. The information demand analysis is understood as a method that leads to the determination of information in order to solve objective-defined

tasks (Kereimann, 1976). Additionally, the information demand analysis helps to determine the type, quantity and quality of information (Heinrich et al., 2014). The needs of the labour market are simultaneously seen as a potential for foreign workers. To solve these issues, it is necessary to identify problems as well as the information demand of employers and employees, which is the foundation for the development of an integrated technology solution.

### 2.1. Problems on the labour market from the employer's point of view

Nowadays the employers have more and more difficulties in finding the real talents on the labour market. Employers have problems filling vacancies in many countries, despite high unemployment rates. In a regular survey of 2015, Manpower Group shows that 38% of all employers in 42 countries demonstrate the problems with the shortage of skills. The most wanted professions are specialists, including positions such as skilled workers and sales staff, as well as technical positions like: engineers, technicians and IT workers, but also leadership, management and supervising positions are in demand around the world (Manpower Group, 2015).

The problems and reasons for the lack of specialists are also mentioned in the study by Manpower Group. Most of the respondents: 35% declare a small number of applicants, 34% show lack of expertise and 22% lack of experience. 17% the applicants do not have proper social skills, and 13% of applicants claim too much salary (Manpower Group, 2015). The above information shows a few examples of the problems on the labour market from the company's point of view, which has a significant influence on structuring a proper information demand model.

### 2.2. Problems on the labour market from the Chinese students' point of view

Most companies are suffering from a deficit of skilled candidates. That is why several companies need to use special strategies to increase the number of applicants, thus minimising the shortage of skills. One of the strategies is the expansion of the applicant pool by foreign workers. Therefore, the problems of potential foreign applicants need to be also determined and analysed. These problems can be identified on the basis of an example of Chinese students willing to work abroad.

In May 2017, we inquired 189 Chinese students from Guangdong University of Foreign Studies about their problems in finding work abroad. 20.3% of male students and 79.7% of

female students were aged between 19 and 24. The online survey was conducted in the Chinese language. In order to define the applicant pool with potential foreign workers, we analysed the interest in the foreign labour market. We asked the students "if they were interested in a job abroad and how long they would like to work abroad?" For this question there were 5 answer options: "3 months, 6 months, 12 months, over 12 months, and I would not like to work abroad", see figure 1. Most students would be glad to stay abroad for 12 months or more to have the possibility to develop their skills, 30.5% of students were interested in a short-term job. No one replied that he/she has no interest in working abroad.

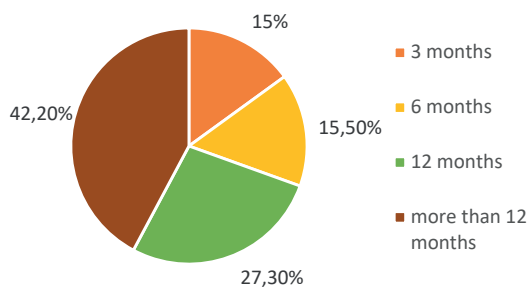


Figure 1. Interest in working abroad: How long would you like to work abroad?

Source: own research

The next question measured the requirements of professional knowledge. We asked the students whether they had any work experience (see figure 2). Most of the students (75.9%) had no work experience and 24.1% had "1-2 years of work experience".

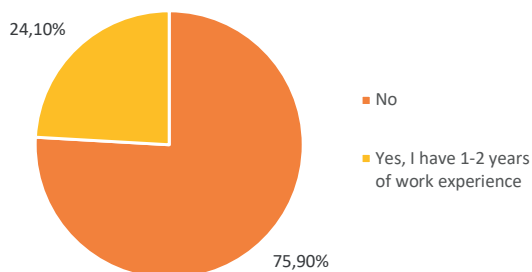


Figure 2. Students' work experience: Do you have work experience?

Source: own research

The next question measured the students' information demand during their internship abroad. We asked students about their problems and what would be the scariest thing for them? (see figure 3). The results show that the students were most concerned about the organisational problems (36.3%), for example searching for an apartment; additionally, formal

requirements in a foreign country are seen as a problem. Some of the students (29.9%) were also scared that their certificates would not be acknowledged or equal with the certificates gained abroad. Cultural differences (12.8%) as well as staying alone abroad (10.1%) did not frighten the students so much.

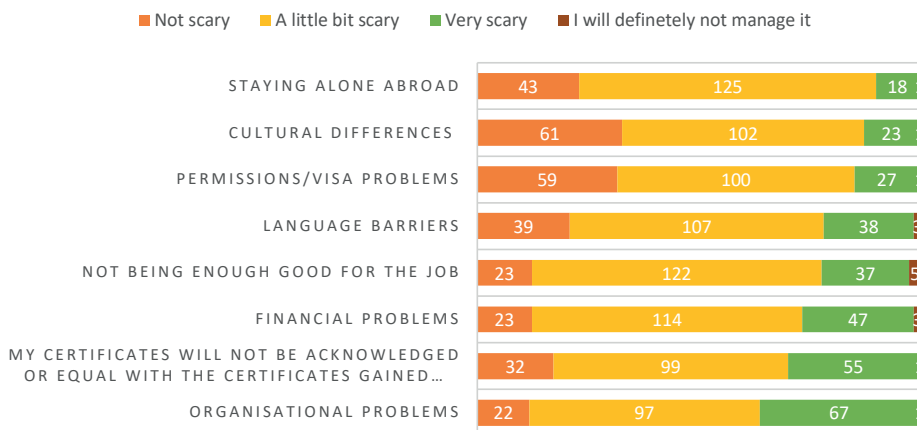


Figure 3. Information demand during work abroad: While applying for a job or internship abroad, what will you be scared about?

Source: own research

### 2.3. Problems on the labour market from the employer's and employee's point of view

On the basis of a short analysis of the difficulties on the labour market, a short summary of the main problems faced by employers and employees is presented (see Table 1). This summary should serve as an example of data that

should be collected, normalised and analysed in the information demand model (see Figure 4).

The above data are only a presentation of the direction of research, which should be done in depth to obtain representative results and improve the algorithm that allows solving real problems on the labour market.

Table 1: Data example – the main problems on the labour market from the employer's and employee's point of view

Problems on the labour market from the employer's point of view	Problems on the labour market from the employee's point of view
small number of applicants	organisational problems
lack of expertise	certificates will not be acknowledged or equal with the certificates gained abroad
lack of experience	financial problems
applicants do not have proper social skills	not being good enough for the job
applicants claim too much salary	language barriers

Source: own research.

### 3. Development of an information-logistics engine

Data warehousing systems are often developed in a simple way, which does not consider any target-oriented information demand of the users. Therefore, there is a gap in the development of a data warehouse system which should

consider the information demand of the users (Strauch, Winter, 2002). The concept of data warehousing is a part of an information-logistics engine (Fraunhofer-Institut, 2004), which is necessary for the development of a technology-driven application to strengthen the foreign labour market information system (see figure 4).

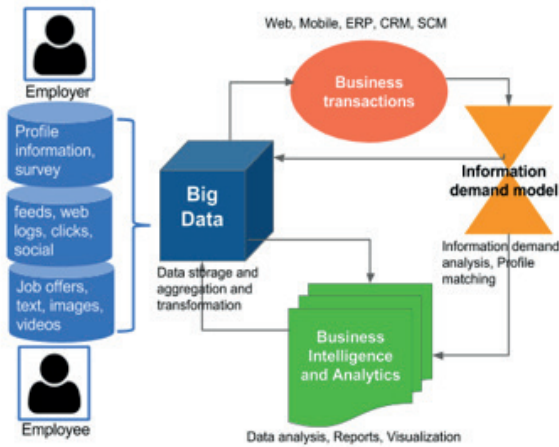


Figure 4. Information-logistics engine

Source: Based on Strauch, Winter (2002) and Fraunhofer-Institut (2004)

The proposed information-logistics engine solution consists of four main areas: Big Data, Business Transactions, Information Demand Model and Business Intelligence and Analytics. This model shows how these four systems are interrelated to achieve the maximum value and effectiveness of all forms of data, with the purpose to use them in a web-based application that can be useful in foreign human resources management.

In the Big Data system, all data about employers as well as employees are stored, aggregated and transformed into usable formats. The data gathered from personal profiles of employees and employers, as well as through surveys, help to analyse their information requirements. The data of job offers, their videos and images lead to better understanding of how customers (employees and employers) deal with the product. User behaviour data are also collected from weblogs, clicks, social interactions and feeds, which provides effective user orientation.

The Big Data system interacts simultaneously with Business Transactions and Business Intelligence systems, which helps to understand customer needs. The business transaction system analyses key parameters of available resources and actions of the organisation, which is responsible for the development of the web-based application. The Business Transaction system considers among others: customer relationship management, enterprise resource planning as well as web and mobile resources.

The transformed data from the Big Data and Business Transaction systems are confronted with the Information demand model. What is analysed here is the labour market data, as well as employer's and employee's problems.

In this place the information demand analysis is conducted and a specialised matching algorithm is constructed, which determines the type, quantity and quality of the required data. The example of useful data was presented with the help of statistics in the previous section ("Problems on the labour market from the employer's and employee's point of view"). In the information demand model, a real-time information demand analysis is carried out. The analysis dynamically detects the actual and target state and compares them with each other, which leads in turn to goal-oriented requirements matching.

The target oriented and filtered information is delivered to the Business Analytics system, where it is analysed and presented in a visual form. This analysis can be used for driving the web-based application, which will automatically respond to customer's requirements.

#### 4. Conclusion

The paper presents theoretical and practical examples of the information demand as well as challenges facing the foreign labour market. The examples are analysed using the companies' and students' surveys, which identified the main problems facing employers (like a small number of applicants or lack of expertise and experience) and foreign employees (like organisational problems or formal requirements in a foreign country), during the job application process.

The proposed information-logistics engine, described in the practical part of the paper, was designed as a core for the software architecture of target-oriented application, in which the

user requirements are not clear but have the highest priority. This kind of solutions can be used for example in a web-based application for managing human resources. The concept was built on the basis of a data warehouse model, which was constructed with the consideration of the information demand model. It has been demonstrated that the information demand model is one of the important areas

of information logistics engines and is responsible for customer-orientation and filtration of the information.

Furthermore, it might be interesting to develop the approach model for the information demand analysis and define its exact states, in order to concretise the information demand model, which is a part of the information-logistics engine.

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