



**ORIGINAL ARTICLE**


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Contact to corresponding author: Gul Shah Sabary, gul\_khost@hotmail.com

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**Gul Shah Sabary**

*Tomas Bata University in Zlin, Czechia*

 [orcid.org/0000-0001-5316-3514](https://orcid.org/0000-0001-5316-3514)

**Aleksandr Ključnikov**

*Pan-European University Prague, Czechia*

 [orcid.org/0000-0003-0350-2658](https://orcid.org/0000-0003-0350-2658)

## **Barriers to immigrant entrepreneurship: A causal relationship analysis of the Asian immigrant entrepreneurs in Germany employing the DEMATEL approach**

**JEL Classification:** C40; F22; J60; L26

**Keywords:** *immigrant entrepreneurship; causal relationship; immigrant barriers; DEMATEL method*

### **Abstract**

**Research background:** Entrepreneurship and migration are top priorities on many national and international agendas. As a result, entrepreneurship is one of the most popular strategies immigrants use to avoid unemployment in a host country. However, studies lack to discuss causal relationships among key barriers to immigrant entrepreneurs.

**Purpose of the article:** This study attempts to fill the knowledge gap and investigate the causal relationship between the primary obstacles faced by Asian immigrant entrepreneurs in Germany.

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**Methods:** A predesigned questionnaire was used in face-to-face interviews with Asian business owners in Germany for the study, and the Decision-Making Trial and Evaluation Laboratory (DEMATEL) method of data analysis was used.

**Findings & value added:** The findings reveal that lack of sufficient financial resources to establish a business, high market competition, and a lack of knowledge of the local language of the host country are the most significant barriers, among others, which may severely hamper Asian immigrant business performance and have a considerable impact on their entrepreneurial decision. At the same time, lack of professional knowledge & skills, problems with rules & regulations, and cultural differences are among the least essential obstacles for Asian immigrant entrepreneurs. The findings show that unfamiliarity with the local language, problems with rules and regulations, cultural differences, and lack of international business experience are associated with the causer category. However, lack of enough capital to establish a venture, lack of professional knowledge and skills, difficulty in access to financial resources, and high market competition relate to the receiver category. This research generates value for policymakers, particularly those participating in migration studies. One of the study's novelties is using the DEMATEL framework for decision-making on barriers to immigrant entrepreneurship in the European context.

## Introduction

The socioeconomic growth of ethnic communities, as well as the host and home countries, is significantly impacted by immigrant entrepreneurship (Duan *et al.*, 2021, Del-Aguila-Arcentales *et al.*, 2022). It contributes to reducing unemployment, and poverty, improving economic growth (Fatoki & Patswawairi, 2012, pp. 139–140, Kloosterman, 2003), and attracting global attention as it remains a top issue in many national and international agendas (Naudé *et al.*, 2017; Oliinyk *et al.*, 2022). Therefore, recent studies found that immigrant entrepreneurship is an important factor that impacts the growth and development of host countries (Malki *et al.*, 2020, p. 1337); it is a crucial debate for policymakers and scholars in Europe (Lolat & Davidaviciene, 2016, p. 3). International migration makes it more likely that someone will establish a new firm (Wassink, 2020, p. 11). High unemployment, inadequate participation, and low status are the primary drivers of immigrant entrepreneurship in many European countries (Baycan-Levant & Nijkamp, 2009; Mishchuk *et al.*, 2019). Setting up firms in developed economies presents considerable contextual challenges for immigrant entrepreneurs from developing nations (Azmat, 2013). In general, entrepreneurs from less-developed countries face problems with a lack of human capital and have difficulty accessing financial institutions (Kloosterman, 2003, p. 168). In Europe, more immigrant entrepreneurs than native-born ones face greater challenges due to their lower social capital, linguistic con-

straints, restricted access to financial institutions, and lack of market knowledge (Lolat & Davidaviciene, 2016).

Barriers to immigrant entrepreneurs have been widely discussed among numerous researchers. Recent researchers investigated barriers to migrant entrepreneurship from different angles. For instance, the viewpoints of immigrant entrepreneurs on the obstacles to their inclusion in public procurement in Sweden are the main subject of Kordestani *et al.* (2017, p. 1). Embiricos (2020, p. 245) investigates challenges to refugee entrepreneurs employing the ethnographic method in Germany. Using descriptive statistics and principal component analysis, Fatoki and Patswawairi (2012, p. 133) investigate the drivers and barriers immigrant entrepreneurs face in South Africa. Yang and Lin (2021, p. 1) focus on overcoming informal barriers of immigrants to trade by employing the theoretical gravity model. However, research on the causes of immigrant entrepreneurial obstacles is still limited, especially in the European setting. Therefore, this research tends to fill this gap. Using the Classical Decision Making Trail and Evaluation Technique (DEMATEL), it examines how the major obstacles to immigrant entrepreneurship interact. Based on experts' assessments, this strategy establishes a direct association between the number of parameters (Feng & Ma, 2020, pp. 8–10). Numerous researchers have utilized this technique to study causal relationships between barriers to immigrant entrepreneurship as shown in Table 2.

This study continues previous research focusing on key motivational factors behind Asian immigrant entrepreneurship. The previous study identified key motivating factors by employing the DEMATEL approach. It was found that Asian immigrants consider the acquisition of capital, unemployment trends, financial hardships in the family, and an opportunity in the market as high motivating factors. Additionally, entrepreneurship in the family, the state support policy for immigrants, low level of education, unfamiliarity with the local language, and dissatisfaction with the previous job belong to the causal group, while capital acquisition, opportunity in the market, immigrant community ties or social networks, unemployment, and financial problems in the family associate to the effect group (Sabary *et al.*, 2023). This study identifies key barriers by analyzing interrelationships among the main barriers to immigrant entrepreneurship using the DEMATEL technique. It specifies barriers that either influence other barriers or receive influence from other barriers in immigrant entrepreneurship in Europe.

The European Commission claims that immigrants are a significant source of future business owners. However, they can encounter the same unique legal, cultural, and language, access to finance, and lack of networks challenges as other more vulnerable populations (Ashourizadeh *et al.*, 2022). The Commission conducted several projects, namely, the entrepreneurial action plan 2020 and the action plan on Integration and Inclusion 2021–2017. Their main objective is to revolutionize the culture of entrepreneurship in Europe, remove barriers, and unleash the entrepreneurial potential of Europe (European Commission, 2023).

Germany continues to be one of the most immigrant-friendly nations in Europe (Hillmann, 2021, p. 2); more than 15% of Germans were born abroad in 2020 (Malki *et al.*, 2020, p. 1337). Compared to Germans, it was shown that immigrants have lower self-employment rates (Baycan-Levant & Nijkamp, 2009, p. 386). It is recognized that immigrant entrepreneurs contribute to the German economy (Hillmann, 2021, p. 2). However, according to estimates, one out of three of all newly founded enterprises failed within the first three years of operation. This estimation is still greater among migrant businesses than among native German businesses. Enterprises established by immigrants encounter more structural challenges (bureaucratic laws and regulations) than enterprises run by citizens (Hillmann, 2021, p. 8). The main challenges for refugee entrepreneurs in Germany are a lack of social networks, language proficiency and skills, and financial support and start-up capital (Embiricos, 2020, p. 253). Schmich and Mitra (2023, p. 9) analyzed the support systems necessary for the economic integration of refugees by analyzing the economic, social, and policy context of refugee entrepreneurship in Germany. The authors argue that enough capital to start up a business, language problems, particularly understanding the managerial process, embeddedness, and problems in understanding the local market are key barriers to refugee entrepreneurship in Germany. These studies applied different methodologies discussing challenges to immigrant and refugee entrepreneurship in Germany. For instance, Schmich and Mitra (2023) use Wauter and Lambrecht's framework to compare the economic, social, and policy context for refugee entrepreneurship in the UK and Germany, Hillmann (2021) analyses policies for migrant economies conducting a literature review, Malki *et al.* (2020) investigate entrepreneurial financing of immigrant entrepreneurship using systematic review, Embiricos (2020) applied an ethnographical method to identify challenges of refugee entrepreneurship in Germany. However,

there is a lack of studies investigating the interrelationship among barriers to immigrant entrepreneurship. This study aims to analyze the causal relationship among the main barriers to immigrant entrepreneurship using the DEMATEL approach for Germany. This technique has reportedly been widely employed to examine the causal links of significant barriers based on the opinions of numerous experts (Hashemi *et al.*, 2022, p. 614) and as a resource for researching and solving challenging issues. It computes the cause-and-effect links between each problem component using matrices and associated mathematical theories (Kumar *et al.*, 2018, p. 7).

According to Raghuvanshi *et al.* (2017, p. 234), a causal relationship analysis of immigrant entrepreneurship should include more than five specialists. The present study expands on this notion by interviewing fifteen experts to obtain their perspectives on the interrelationships between the obstacles faced by Asian immigrant business owners in Germany.

The first portion of this study contains an introduction and a literature review. Then, it involves methodology, including a sub-section of an overview of the DEMATEL approach. The discussion and results are the main later points. It presents the study's principal conclusions in the final section.

## **Review of the literature**

### *Barriers to immigrant entrepreneurship*

According to Golob *et al.* (2020, pp. 609–612), entrepreneurship is a successful method for successfully integrating into the host society. In some parts of central Europe, migrant entrepreneurs face particular difficulties in comprehending local economic regulations, cultural norms, and linguistic differences. They frequently work with specialized services and goods. They often do not view themselves as immigrants but as business owners, asserting that they have similar demands to other business owners. The most frequent issues that refugee entrepreneurs deal with, according to Schmich and Mitra (2023, p. 9), are seed capital, language obstacles, location, embeddedness, and familiarity with the local market. The authors state that there are no appreciable distinctions between the UK and Germany regarding the difficulties faced by refugee businesses. According to Wąsikiewicz-Firlej (2021, p. 111), migrants struggle to understand the local language, education, and unemployment in Poland. According to Nijhoff

(2021, p. 1057), establishing a business in the Netherlands can be difficult for refugees due to a number of factors, including language barriers, residency issues, bureaucracy, financial constraints, and social ties.

A study by Lolat and Davidaviciene (2016, p. 5) shows that the main obstacles for immigrants to access entrepreneurship in Belgium include a lack of skills, sufficient funding to launch a business, and rules and regulatory limits. While Hillmann (2021, pp. 8–14) argues that migrants face more structural difficulties (bureaucratic rules and regulations) than those run by natives in Germany. According to Embiricos (2020, p. 253), there are three main challenges for refugee entrepreneurs in Germany – access to finance and start-up capital, lack of language skills and knowledge, and lack of social networks. Kordestani *et al.* (2017, pp. 9–22) claim that lack of business experience and training to establish a firm is the most prevalent barrier to increasing immigrant entrepreneurs' entrepreneurial activities in Sweden. The authors argue that immigrant entrepreneurs operating as suppliers face various challenges, namely poor language skills and access to adequate financial resources that limit the potential to boost sales.

All organizations and people in a given country, area, or society are influenced by the cultural profile, legal system, political climate, and social conventions (Zhai & Su, 2019, p. 4; Çera *et al.*, 2022; Ključnikov *et al.*, 2021; 2022; Civelek *et al.*, 2021; Apostol, 2022; Kubiciel-Lodzińska *et al.*, 2023). A study employing the systematic literature review by Duan *et al.* (2021, p. 10) reveals that immigrant entrepreneurs believe that because of discrimination in the host country, their culture may present obstacles rather than opportunities. However, some people take advantage of their cultural heritage to escape discrimination in the workplace. Therefore, culture can either support immigrant entrepreneurial motivation or act as an obstacle to it. Wassink (2020, pp. 1–7) believes that any past migration experience raises the likelihood of entrepreneurial entry in comparison to non-migrants in Mexico. The author states that the likelihood of starting a business in Mexico was found to have a statistically significant positive link with an earlier US migration experience. As a result, the number of months spent moving positively correlates with the likelihood of starting a business.

Fatoki and Patswawairi (2012, p. 139) argue that high competition in the market, lack of business skills, inadequate finance (the main barrier), and lack of government support hamper the business performance of immigrant entrepreneurs in South Africa. According to Teixeira *et al.* (2017, pp. 183–184), immigrant entrepreneurs in Canada still struggle with substantial

challenges related to funds (a major barrier), bureaucratic red tape, a lack of knowledge and support, a lack of competence, and a lack of knowledge. According to the author, the primary challenges facing other ethnic entrepreneurs in Canada continue to be a lack of financial support, unfair competition, and a lack of business expertise.

The ability of the host country's language may have an impact on entrepreneurial motivation on average, English-speaking immigrants have a higher entrepreneurial rate than non-English-speaking immigrants; as a result, being unable to speak and communicate creates an entrepreneurial barrier for women immigrants in Australia (Collins & Low, 2010, pp. 97–99). A literature review conducted by Azmat (2013, p. 208) reveals that women immigrant entrepreneurs generally face numerous challenges such as human capital, culture, family, institutional factor (regulation, etc.), gender, and social capital.

In recent years, the Decision Making Trial and Evaluation Laboratory (DEMATEL) has been widely implied in various disciplines, including entrepreneurship shown in Table 2. This approach considers interrelationships among factors and visualizes the relations' structure with direct relation matrices. As barriers to business performance remain a key debate among researchers, the DEMATEL method has been used in numerous studies to reflect interrelationships among barriers to business activities (Hashemi *et al.*, 2022, p. 608; Shen, 2016, p. 7).

Raghuvanshi *et al.* (2017, p. 230) studied barriers to women's immigrant entrepreneurship by employing the DEMATEL approach for India. The authors identified eight barriers as a causer category, including difficulties in obtaining financial resources, a lack of institutional support, geographic mobility, a lack of family support, a lack of marketable skills, a lack of social connectivity, a lack of entrepreneurial management, a lack of technological know-how, and a lack of opportunities for education, experience, training, and employment. Meanwhile, they indicate six receiver-side impediments, including a lower propensity to participate in entrepreneurial activities, different tactics and practices, delayed growth, fewer financial rewards, high shutdown rates, and a lower propensity to take risks. Education, experience and training possibilities, spatial mobility, and lack of family support have greater values among the causer group. On the other hand, high shutdown rates and a lack of risk-taking inclination had larger negative values; therefore, additional barriers have a greater impact on these barriers.

The present study follows up the same methodology to investigate causal relationships among the main barriers to Asian immigrant entrepreneurship in Germany. Therefore, an intensive literature review was conducted, searching Scopus, Web of Science, and Science Direct databases to identify the main barriers to immigrant entrepreneurship, as shown in Table 1. It includes the main barriers to immigrant entrepreneurship cited in various studies. These studies employed different methodologies; however, there is a lack of studies to show the interrelationship among the main barriers to immigrant entrepreneurship, particularly from the European context. Therefore, this study applies the DEMATEL approach to identify cause-and-effect barriers to immigrant entrepreneurship.

#### *Cause and effect and its implication in entrepreneurship*

The cause and effect concepts have been widely implied in various studies related to entrepreneurship, as shown in Table 2. These two groups reflect causal relationships among elements in a system. They are calculated after the total relationship matrix (see Methodology section). The two categories of criteria – causes and effects – can be separated based on  $R - C$ . The cause group consists of all the criteria with positive  $R - C$  values that immediately impact the other criteria. Instead, effect groups consist of all the criteria with negative  $R - C$  values and are consequently directly impacted by other criteria (Gupta *et al.*, 2022, p. 640; Kumar *et al.*, 2018, p. 13). The  $R$  factor reflects the influence of other dimensions, whereas the  $C$  value reflects the influence on other dimensions. According to Sing and Acharya (2014, p. 95),  $C + R$  denotes the strength of the link between dimensions, while  $C - R$  denotes the strength of the effect. Gupta *et al.* (2022, p. 640) claim that  $R + C$  value indicates the factor's level of relevance. The greater the  $R + C$  number, the greater the factor's influence over others and, consequently, the more significant it is. However, the  $(R - C)$  value reveals the nature of the interaction between the components.



## Methods

### *Data and sampling method*

Due to the nature of the research, data is collected using the expert sampling method, a particular purposive sampling approach. This technique is a subtype of the purposive sampling technique (Statistics How to, 2023). Respondents' knowledge is one of the important difficulties in the purposeful sampling process, where the researcher determines what kind of sample units to include in the study (Campbell *et al.*, 2020, pp. 2–3). The quality of the experts is typically more significant than their quantity in non-random sampling techniques. In Germany's Nordrhein-Westfalen, fifteen Asian immigrant business owners were asked for this aim using pre-made questions. Each expert was given the task of assessing the influence of factor (i) on factor (j) from 0 "no influence," 1 "low influence," 2 "very low influence," 3 "high influence," and 4 "very high influence" based on the DEMATEL method's basic tenets (Sabary *et al.*, 2023, p. 295). According to Kumar *et al.* (2018, p. 9), the size of respondents from 5 to 20 is acceptable for the DEMATEL approach. Various researchers have undertaken certain studies with five or fewer respondents. For instance, Sekar and Zavadskas (2017) include five experts, while Raghuvanshi *et al.* (2017) include four decision-makers.

Figure 1 shows the present study's conceptual framework, which includes several steps. First, an extensive literature review was conducted. In this step, Scopus, Science Direct, and Web of Science databases were checked to select relevant publications concerning the main barriers to immigrant entrepreneurship and the implication of the DEMATEL approach in entrepreneurship. Second, experts with immigration backgrounds evaluated interrelationships among the main barriers. Third, the DEMATEL approach was employed to extract results. Then, we analyzed the results to identify cause and effect and prioritized barriers in immigrant entrepreneurship. Next, we discuss the present results of previous research. Finally, we conclude the present study's main results and key aspects.

### *The DEMATEL method: an overview*

The DEMATEL technique illustrates the fundamental idea of contextual interactions between a system and its components (Raghuvanshi *et al.*,

2017, p. 225). Component analysis can be utilized with the Decision Experiment Evaluation Laboratory to examine the logical and causal relationships between components in complex scenarios (Chen *et al.*, 2022, pp. 1–21; Lisi *et al.*, 2018, p. 2). Based on experts' opinions, this method forms a direct link between various parameters (Feng & Ma, 2020, pp. 8–10). This strategy includes the following steps:

**First step:** *Average matrix or direct relation matrix (A)*

Based on feedback from experts, this matrix was created. Through the use of a predetermined scale, experts assess each component. This study uses five scales to assess how much one element (i) impacts another (j).

$$A_{ij} = \frac{1}{H} \sum_{k=1}^H X_{ij}^k \quad i, j = 1, 2, \dots, n. \quad (1)$$

After each factor has been evaluated by the experts and given a score between 0 and 4, an average matrix (A) in (n x n) dimension is obtained. The average value in which factor (i) influences factor (j) is shown by  $A_{ij}$ . The components of an average matrix for a problem are the average values of (H) experts. The H experts' matrices are represented by  $X_1, X_2, \dots,$  and  $X_H$ . K is the total number of responders, and n is the total number of factors.

**Second step:** *Normalized initial direct-relation matrix (D)*

Equations (2) and (3) are used to calculate this matrix.

$$D = k.A \quad (2)$$

$$k = \frac{1}{\max_{1 \leq i \leq n} \sum_{j=1}^n a_{ij}} \quad i, j = 1, 2, \dots, n \quad (3)$$

**Third step:** *Total direct-relation matrix (T)*

Equation 4 is used to compute the total direct-relation matrix. The [n x n] dimensional identity matrix is represented by (I) in this equation.

$$T = D(\mathbf{I} - D)^{-1} \quad (4)$$

In this stage, the total relation matrix's  $r_{n \times 1}$  and  $c_{n \times 1}$  variables stand for the sum of the rows and the sum of the columns, respectively.

$$r = r_1 \dots r_i, \dots r_n = (r_i)_{n \times 1} = \left[ \sum_{j=1}^n t_{ij} \right]_{n \times 1} \quad (5)$$

$$c = c_1, \dots c_j, \dots c_n = (C_j)_{1 \times n} = \left[ \sum_{i=1}^n t_{ij} \right]_{1 \times n} \quad (6)$$

The sum of the  $i^{\text{th}}$  row and the  $j^{\text{th}}$  column of the total relation matrix are denoted by the letters  $r_i$  and  $c_j$ , respectively, in the formulas above. Additionally, factor (i) 's received and delivered effects are both included in the sum ( $r + c$ ). The difference ( $r - c$ ) represents the system's overall response to factor (i). There are two outcomes when a person calculates ( $r - c$ ):

1. Positive value: A positive value for ( $r - c$ ) indicates that the factor in question is connected to the cause group. That factor (i) has an impact on other factors.
2. Negative value: A negative value from ( $r - c$ ) indicates a factor's link with the scenario's effect group. It implies that other factors influence factor (i).

***Fourth step: Construction of the casual relationship diagram***

This diagram is constructed using the threshold value ( $\infty$ ). It shows relationships among various factors. The threshold value is calculated as an average of the total relations matrix (T). Each value in the total relation matrix is compared to the Alpha value. The more causal ties that the Alpha suggests, the more components have a larger value in the total relation matrix.

$$\infty = \frac{\sum_{i=1}^n \sum_{j=1}^n [t_{ij}]}{N} \quad (7)$$

Where T is the total relation matrix, and N is the total number of entries in T.

## Results

### *Personal characteristics of the participants*

The range, frequency, and percentage of participant traits are calculated using descriptive statistics and are shown in Table 4. There are 15 entrepreneurs who have been interviewed, and they come from Afghanistan, India, Pakistan, Iran, Sri Lanka, Syria, and Vietnam. Each and every respondent is a man. The biggest percentage of responses (40%) belongs to the age range (41–50). The respondent's level of education is respectable; most (60%) of them completed their undergraduate degrees, and all of them have at least a high school diploma. Since 11 out of 15 respondents have lived in Germany for between 11 and 20 years, their stay as immigrants is indefinite. Although most entrepreneurs have experience operating their own businesses, 53% have been in operation for over ten years. 33 percent of respondents, however, have been in the company for six to ten years, demonstrating that they are experienced in running their firm and have long-standing ambitions to succeed as entrepreneurs. Businesses owned by entrepreneurs include restaurants (40%) and translation services (13%), supermarkets (27%), and other 20% (Sabary *et al.*, 2023, p. 298).

### *Identification of causal relationships among the main barriers to Asian immigrant entrepreneurship*

We utilized two stages for calculating the results. Firstly, each expert was individually interviewed to evaluate the effect of one barrier on other barriers as a form of a matrix. Therefore, we extract fifteen matrices, as shown in Table 3. Second, the DEMATEL approach was employed to extract the results for the present study. So, we used the initial three principles of the DEMATEL method step by step to achieve different matrices such as the initial direct relation matrix, normalized direct relation matrix, and Total relation matrix, as shown in Table 5, Table 6, and Table 7. The last step we used to achieve the interrelationship diagram which is visible in Figure 2.

The impact of one factor on other factors and relations was determined utilizing  $R + C$  and  $R - C$  values. The cause and effect categories are identified by computing  $R - C$  values. It is recognized that the causal or causer factor is achieved when the difference of  $R - C$  values is a positive value.

Meanwhile, the negative difference of R – C values means the effect or receiver factor.

We used Equation (5) and Equation (6) to calculate R and C values, as shown in Table 7. Then, we computed R – C to identify cause and effect barriers of Asian immigrant entrepreneurs, as shown in Table 8. Our findings show that both causer and receiver types of barriers affect the performance of immigrant entrepreneurs' businesses. It shows that unfamiliarity with the local language (B2), problems with rules and regulations (B3), cultural differences (B7), and lack of experience in international business (B8) have a link to the causal group. It indicates that these barriers influence the other barriers. Among the causer category, cultural differences and unfamiliarity with the local language have higher values of 1.396 and 0.747, respectively. Therefore, these two barriers strongly influence the remaining six barriers to Asian immigrant entrepreneurial performance. The other two causal barriers, such as lack of experience with international business and problems with rules and regulations, have lower values of 0.314 and 0.263, respectively. These barriers have a relatively lower influence on other barriers.

Meanwhile, we also found that lack of enough capital to establish a venture (B1), lack of professional knowledge and skills (B4), difficulty in access to financial resources (B5), and high competition in the market (B6) belong to the effect group. It clarifies that these barriers are affected by unfamiliarity with the local language, problems with rules and regulations, cultural differences, and lack of experience in international business. Among the effect category, high competition in the market and lack of enough capital to establish a venture have higher negative values of -1.371 and -0.76, respectively. This means that these two barriers receive a large influence from the casual category. However, lack of professional knowledge and skills and difficulty accessing financial resources have lower negative values of -0.062 and -0.448, respectively. It shows that lack of professional knowledge & skills and difficulty in access to finance receive the lowest influence from other barriers.

We used Equation 7 to compute the Threshold value ( $\infty$ ). Through this value, we identified interrelationships among the barriers mentioned above to Asian immigrant entrepreneurship, as shown in Figure 2.

$$\infty = 0.12608$$

Figure 2 shows interrelationships among barriers to Asian immigrant entrepreneurship computing  $r - c$  values. It shows that cultural differences (B7) and unfamiliarity with the host country's local language (B2) have the highest positive values. Therefore, these two barriers have interrelationships with most of the remaining barriers. Also, they have the highest influence on other barriers. While high competition in the market (B6) and lack of enough capital to establish a venture (B1) have the highest negative values of -1.37 and -0.76, respectively. It indicates that these two barriers have large relationships with the remaining barriers.

Prioritization is an important issue in the decision-making process. Therefore, immigrant entrepreneurs must understand the degree of priority of the listed barriers. This issue can be calculated using  $R + C$  values. Previous studies, for instance, Dimken and Tas (2018, p. 16) and Sekar and Zavadskas (2017, p. 5) argue that  $R + C$  indicates interrelationships between two or among many factors and the importance of the factor. Kumar *et al.* (2018, p. 5) claim that the degree of priority can be identified by computing  $R + C$  values. Therefore, the authors believe that the high value indicates the high priority of the factor.

In line with these arguments, our findings show that lack of enough capital to establish a business (B1), high competition in the market (B6), and unfamiliarity with the local language of the host country (B2) are the highest prioritized barriers among other barriers which may highly hamper Asian immigrant business performance. However, lack of professional knowledge & skills (B4), problems with rules & regulations (B3), and cultural differences (B7) are among the lowest prioritized barriers to Asian immigrant entrepreneurs in Germany. Based on Table 8, all included barriers to immigrant entrepreneurs can be prioritized below:

B1 > B6 > B2 > B5 > B7 > B4 > B3 > B8 >

## **Discussion**

Lack of enough capital to establish a venture, high competition in the market, and unfamiliarity with the local language are the most important barriers that Asian immigrant entrepreneurs prioritize over any other barrier in Germany. According to Asian business experts, these barriers are the key obstacles that can hamper their business performance. Most of these ex-

perts argue that the lack of enough capital to establish a venture is the most influential obstacle to their entrepreneurial activities. This argument confirms previous findings indicating that the financial problem is severe for immigrant entrepreneurs. According to Schmich and Mitra (2023, p. 17), seed capital is a key barrier in a start-up business for immigrant entrepreneurs in Germany. Teixeira *et al.* (2017, pp. 183–84) found that financial constraints are the key obstacle for immigrant entrepreneurs in Canada. Similarly, Lolat and Davidaviciene (2016, p. 5) argue that inadequate funds to establish a venture is a serious problem for immigrant entrepreneurs in Belgium.

Asian immigrant entrepreneurs rate competition in the market as a second key barrier to their entrepreneurial performances. This result supports previous research findings indicating that high market competition may influence business performance (Fatoki & Patswawairi, 2012, p. 139), particularly immigrant business activities (Teixeira *et al.*, 2017, pp. 183–84). Elmassah *et al.* (2022, p. 7) found that less competition in the market is a key factor that motivates immigrants to select self-employment in the UAE.

According to Asian immigrant entrepreneurs, unfamiliarity with the local language is the third key barrier for Asian immigrant entrepreneurs that affects their entrepreneurial decisions. Previous studies show that poor knowledge of the local language can impact self-employment. According to Collins and Low (2010, pp. 97–99), the host country's language ability may impact entrepreneurial motivation. The author found that being unable to speak and communicate creates an entrepreneurial barrier for Asian women immigrants in Australia and may impact their entrepreneurial decision. Some other studies argue that inefficient knowledge of the local language is the main barrier for immigrants in Europe, particularly Germany, the UK, and Poland. However, these studies do not indicate the degree of importance (Wąsikiewicz-Firlej, 2021, p. 111; Schmich & Mitra, 2023, p. 9; Golob *et al.*, 2020, p. 620)

Cultural differences remain an important barrier but not the biggest challenge for Asian immigrant entrepreneurs. They rank it as the fourth barrier that may influence their entrepreneurship, that may reflect the previous argument of researchers, for instance, Castillo-Palacio *et al.* (2017, p. 5), which state that culture may have a favorable or unfavorable impact on entrepreneurship depending on the country's economic situation. According to Duan *et al.* (2021, p. 10), immigrant entrepreneurs believe that be-

cause of discrimination in the host country, their culture may present obstacles rather than opportunities. However, some people take advantage of their cultural heritage to escape discrimination in the workplace.

Asian immigrant entrepreneurs evaluate the lack of experience in international business as the lowest barrier to their entrepreneurial activities. Baycan-Levent and Kundak (2009, p. 386) believe that the duration of stay in the host country may motivate immigrants to be self-employed. Any past migration experience raises the likelihood of entrepreneurial entry compared to non-migrants (Wassink, 2020, pp. 1–7). However, there is no evidence in these studies to show the degree of the importance of migration experience that may have an impact on their self-employment.

Problems with rules and regulations remain a key challenge for Asian immigrant entrepreneurs. However, other research findings indicate that they are a main obstacle to immigrant entrepreneurship (Lolat & Davidaviciene, 2016, p. 5), which may limit their potential to establish and run a business (Agoh & Kumpikaite-Valiuniene, 2018, p. 39). According to Azmat (2013, p. 206), entrepreneurs from developing nations that immigrate to developed economies need to cope with major contextual differences while starting their enterprises. This results from their prior exposure to and activities in a social and institutional environment in their native countries, where the regulatory frameworks and formal legal institutions are insufficient.

Raghuvanshi *et al.* (2017, p. 230) investigated the causal relationship among barriers to women entrepreneurship by employing the DEMATEL approach in India. They found that lack of education, experience, training opportunities, and problems in access to financial resources as causal or causer barriers to women entrepreneurs in India. Our findings show a contradiction with their results. We found that lack of professional knowledge & skills and difficulty accessing financial resources are the barriers to Asian immigrant entrepreneurs in Germany. We also found that while a lack of capital to run a business is the strongest barrier for Asian immigrant entrepreneurs in Germany, a lack of education, experience, and training opportunities is the strongest barrier for women entrepreneurs in India.



## **Conclusions**

Immigrant entrepreneurial performance confronts numerous challenges. These challenges impact their livelihoods and the economic condition of the host countries. Therefore, it remains a key issue for policymakers and researchers. The present study includes the main barriers that influence immigrant business activities. It aims to understand the causal relationships among key barriers to Asian immigrant entrepreneurs in Germany. Hence, it can be concluded in three steps. Our results show that barriers to immigrant entrepreneurship fall in both cause and effect categories. For instance, unfamiliarity with the local language, problems with rules and regulations, cultural differences, and lack of experience in international business have been associated with the causer category. However, lack of enough capital to establish a venture, lack of professional knowledge and skills, difficulty accessing financial resources, and high competition in the market belong to the effect group. Secondly, our findings indicate cultural differences and unfamiliarity with the local language have the highest positive values. Therefore, these two barriers have the highest influence on other barriers to immigrant business performance. Lack of professional knowledge and skills and difficulty accessing financial resources have the least negative values, which shows that lack of professional knowledge, skills and difficulty in access to finance receive the lowest influence from other barriers. Thirdly, our investigation states that lack of enough capital to establish a business, high competition in the market, and unfamiliarity with the host country's local language are the highest prioritized barriers among other barriers which may highly hamper Asian immigrant business performance. However, lack of professional knowledge, skills, problems with rules, regulations, and cultural differences are among the lowest prioritized barriers to Asian immigrant entrepreneurs in Germany.

Migration remains a key debate for policymakers and scholars in Europe because of the increasing numbers of migrants who have arrived in European countries in recent years. Migrant entrepreneurs are increasingly demonstrating the value of their position and contribution to both their home nations and that of their hosts. These migrants definitely encounter numerous entrepreneurship obstacles when they establish their businesses. Evidence shows that the European Commission conducted several projects to remove barriers and unleash the entrepreneurial potential of Europe. The Commission struggles to encourage European countries to build effec-

tive policies addressing special challenges in terms of education, difficulty in access to financial resources, lack of sufficient understanding of regulation and financial framework, linguistic problems, lack of networking, and employment. Therefore, this study reveals the most important cause-and-effect barriers to Asian immigrant entrepreneurship in Europe. It contributes to policymakers, particularly national governments of the European countries to upgrade policies concerning immigrant entrepreneurship.

The study has several restrictions. For instance, the researcher faced difficulties gathering the data since some Asian business owners attached less importance to answering. The researchers gathered primary data from enthusiastic and amiable individuals in order to achieve the study's objective. Additionally, it was difficult to locate Asian immigrants who speak English fluently because English is the study's primary language. The researcher chose not to use a translator since they occasionally misread the intended meaning of concepts. As a result, all interviews were performed with respondents who were proficient in English.

The research's main finding is based on the DEMATEL approach's application to the influence linkages between eight barriers to Asian immigrant entrepreneurs. The findings indicate that among other impediments that may seriously impair Asian immigrant business performance, a lack of sufficient capital to launch a business, intense market competition, and unfamiliarity with the native language of the host nation are given the greatest priority. As part of a follow-up study, this can be applied to more nations, and we support further research that examines difficulties faced by EU citizens and immigrants from other nations. Additionally, we support a future study that focuses on the comparative difficulties experienced by immigrant entrepreneurs in both developed and developing nations to comprehend parallels and discrepancies in barriers to immigrant entrepreneurship.

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## Annex

**Table 1.** Main barriers to immigrant entrepreneurship

No	Main barriers	Citation
1	Professional knowledge and experience (B4)	Baycan-Levent and Kundak (2009); Reuber and Sinkovics (2021); Agoh and Kumpikaite-Valiuniene (2018); Dabić <i>et al.</i> (2020).
2	Lack of skills in the local language/ Unfamiliarity with the local language skills (B2)	Baycan-Levent and Kundak (2009); Reuber and Sinkovics (2021); Andoh <i>et al.</i> (2019); Agoh and Kumpikaite-Valiuniene (2018)
3	Rules and regulations (B3)	Fozia and Ranabahu, (2022); Agoh and Kumpikaite-Valiuniene (2018)
4	Difficulty in access to financial resources (B5)	Kordestani <i>et al.</i> (2017); Raghuvanshi <i>et al.</i> , (2017).
5	Cultural differences (B7)	Azmat, (2013); Zhai and Su (2019); Baycan-Levent and Kundak (2009).
6	International business experience (B8)	Dabić <i>et al.</i> (2020); Wassink, (2020).
7	Lack of enough capital (B1)	Fatoki and Patswawairi (2012); Lolat and Davidaviciene (2016).
8	High competition in the market (B6)	Teixeira <i>et al.</i> (2017); Kordestani <i>et al.</i> (2017).

**Table 2.** Previous studies on barrier identification through the DEMATEL approach

No	Author/s	Sample size	Aim of the study
1	Shen (2017)	Thirty experts	Key impediments were identified from various stakeholder viewpoints.
2	Nilashi <i>et al.</i> (2019)	Forty participants	Identified the importance and interrelationships of factors that impact medical tourism.
3	Quinones <i>et al.</i> (2020)	Fifteen experts	DEMATEL will conduct research on the obstacles to university technology transfer and how they are related to one another.
4	Salehi <i>et al.</i> (2020)	Thirty-four participants	Technology barriers at the supply chain level were ranked according to their relationship using the DEMATEL technique and the analytic network process (ANP)/method known as DANP.
5	Xu <i>et al.</i> (2020)	Five experts	Through conducting a literature review and consulting with industry professionals, the study identified key obstacles to the growth of hydrogen refueling stations (HRS).
6	Song <i>et al.</i> (2020)	Ten experts	A combined approach based on enhanced DEMATEL, interpretive structural modeling (ISM), and rough set theory was created. The advantages of the modified DEMATEL method for determining cause-and-effect relationships while taking into account the influence of barrier strength, the merits of the ISM approach for building a hierarchical barrier structure, and the merits of rough numbers for flexibly manipulating vagueness without the need for additional auxiliary information or presumptions were all incorporated into their proposed approach.

**Table 2.** Continued

No	Author/s	Sample size	Aim of the study
7	Dizbay and Öztürkoglu (2020)	Five experts	Emphasized the value of COVID-19 vaccination demand forecasts. To determine the causal connections between variables and give management knowledge for more accurate estimates of vaccination demand, they employed the DEMATEL approach.
8	Maqbool and Khan (2020)	NA	Several hurdles to adopting public health and social services measures to stop the spread of COVID-19 were identified. The DEMATEL approach was used to discover ad hoc correlations between these barriers.
9	Raghuvanshi <i>et al.</i> (2017)	Five participants	Focus on barriers to women entrepreneurs
10	Hashemi <i>et al.</i> (2022)	Five experts	Recognize and characterize failure fears in the global entrepreneurial ecosystem, and investigate the interactions between these fears to lessen their mutually reinforcing effects and lower the psychological obstacles faced by potential entrepreneurs.
11	Addae <i>et al.</i> (2019)	Ten experts	The goal of this study is to identify potential obstacles preventing Accra, the capital of Ghana, from becoming a Smart Energy City. These obstacles will then be prioritized according to their significance and how they interact with one another.

**Table 3.** Expert opinions as a form of matrices

$X1 = \begin{pmatrix} 0 & 3 & 1 & 3 & 1 & 3 & 1 & 4 \\ 4 & 0 & 4 & 4 & 4 & 4 & 0 & 0 \\ 3 & 0 & 0 & 1 & 3 & 4 & 1 & 1 \\ 4 & 0 & 2 & 0 & 4 & 4 & 1 & 0 \\ 4 & 0 & 1 & 1 & 0 & 4 & 0 & 2 \\ 3 & 0 & 0 & 1 & 1 & 0 & 0 & 1 \\ 4 & 3 & 3 & 4 & 4 & 3 & 0 & 1 \\ 3 & 1 & 2 & 0 & 4 & 4 & 1 & 0 \\ 0 & 0 & 0 & 3 & 0 & 3 & 0 & 3 \\ 3 & 0 & 3 & 3 & 3 & 3 & 0 & 1 \\ 4 & 0 & 0 & 0 & 3 & 4 & 0 & 0 \\ 3 & 1 & 0 & 0 & 3 & 3 & 1 & 1 \\ 3 & 1 & 0 & 2 & 0 & 4 & 0 & 0 \\ 4 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 3 & 3 & 4 & 3 & 3 & 3 & 0 & 0 \\ 0 & 0 & 0 & 0 & 3 & 3 & 0 & 0 \\ 0 & 4 & 0 & 4 & 0 & 3 & 0 & 3 \\ 3 & 0 & 4 & 3 & 3 & 4 & 0 & 0 \\ 4 & 0 & 0 & 2 & 3 & 4 & 1 & 0 \\ 4 & 0 & 0 & 0 & 1 & 4 & 0 & 0 \\ 4 & 0 & 0 & 0 & 0 & 4 & 2 & 2 \\ 4 & 1 & 1 & 0 & 1 & 0 & 1 & 0 \\ 4 & 4 & 4 & 2 & 4 & 3 & 0 & 0 \\ 3 & 0 & 1 & 0 & 0 & 4 & 2 & 0 \end{pmatrix}$	$X2 = \begin{pmatrix} 0 & 1 & 0 & 4 & 0 & 3 & 0 & 3 \\ 4 & 0 & 3 & 3 & 4 & 3 & 2 & 0 \\ 3 & 1 & 0 & 0 & 3 & 3 & 1 & 0 \\ 4 & 0 & 0 & 0 & 3 & 4 & 0 & 0 \\ 3 & 0 & 0 & 0 & 0 & 3 & 1 & 1 \\ 3 & 1 & 1 & 1 & 0 & 0 & 0 & 0 \\ 3 & 4 & 3 & 3 & 3 & 3 & 0 & 0 \\ 3 & 0 & 0 & 1 & 3 & 4 & 0 & 0 \\ 0 & 4 & 0 & 3 & 0 & 4 & 0 & 1 \\ 1 & 0 & 4 & 3 & 3 & 3 & 0 & 0 \\ 3 & 0 & 0 & 0 & 4 & 3 & 0 & 1 \\ 3 & 0 & 0 & 0 & 4 & 3 & 0 & 0 \\ 4 & 0 & 2 & 0 & 0 & 3 & 0 & 2 \\ 3 & 0 & 0 & 1 & 0 & 0 & 0 & 0 \\ 4 & 3 & 0 & 3 & 3 & 4 & 0 & 1 \\ 4 & 0 & 0 & 0 & 4 & 3 & 0 & 0 \\ 0 & 3 & 0 & 4 & 0 & 4 & 0 & 4 \\ 4 & 0 & 4 & 4 & 4 & 4 & 1 & 2 \\ 4 & 2 & 0 & 0 & 4 & 4 & 0 & 1 \\ 4 & 2 & 2 & 0 & 4 & 4 & 2 & 0 \\ 4 & 1 & 0 & 2 & 0 & 4 & 0 & 0 \\ 4 & 0 & 0 & 1 & 0 & 0 & 0 & 2 \\ 4 & 4 & 4 & 4 & 4 & 4 & 0 & 0 \\ 3 & 2 & 0 & 0 & 4 & 4 & 0 & 0 \end{pmatrix}$
$X3 = \begin{pmatrix} 0 & 3 & 1 & 3 & 1 & 3 & 1 & 4 \\ 4 & 0 & 4 & 4 & 4 & 4 & 0 & 0 \\ 3 & 0 & 0 & 1 & 3 & 4 & 1 & 1 \\ 4 & 0 & 2 & 0 & 4 & 4 & 1 & 0 \\ 4 & 0 & 1 & 1 & 0 & 4 & 0 & 2 \\ 3 & 0 & 0 & 1 & 1 & 0 & 0 & 1 \\ 4 & 3 & 3 & 4 & 4 & 3 & 0 & 1 \\ 3 & 1 & 2 & 0 & 4 & 4 & 1 & 0 \\ 0 & 0 & 0 & 3 & 0 & 3 & 0 & 3 \\ 3 & 0 & 3 & 3 & 3 & 3 & 0 & 1 \\ 4 & 0 & 0 & 0 & 3 & 4 & 0 & 0 \\ 3 & 1 & 0 & 0 & 3 & 3 & 1 & 1 \\ 3 & 1 & 0 & 2 & 0 & 4 & 0 & 0 \\ 4 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 3 & 3 & 4 & 3 & 3 & 3 & 0 & 0 \\ 0 & 0 & 0 & 0 & 3 & 3 & 0 & 0 \\ 0 & 4 & 0 & 4 & 0 & 3 & 0 & 3 \\ 3 & 0 & 4 & 3 & 3 & 4 & 0 & 0 \\ 4 & 0 & 0 & 2 & 3 & 4 & 1 & 0 \\ 4 & 0 & 0 & 0 & 1 & 4 & 0 & 0 \\ 4 & 0 & 0 & 0 & 0 & 4 & 2 & 2 \\ 4 & 1 & 1 & 0 & 1 & 0 & 1 & 0 \\ 4 & 4 & 4 & 2 & 4 & 3 & 0 & 0 \\ 3 & 0 & 1 & 0 & 0 & 4 & 2 & 0 \end{pmatrix}$	$X4 = \begin{pmatrix} 0 & 1 & 0 & 4 & 0 & 3 & 0 & 3 \\ 4 & 0 & 3 & 3 & 4 & 3 & 2 & 0 \\ 3 & 1 & 0 & 0 & 3 & 3 & 1 & 0 \\ 4 & 0 & 0 & 0 & 3 & 4 & 0 & 0 \\ 3 & 0 & 0 & 0 & 0 & 3 & 1 & 1 \\ 3 & 1 & 1 & 1 & 0 & 0 & 0 & 0 \\ 3 & 4 & 3 & 3 & 3 & 3 & 0 & 0 \\ 3 & 0 & 0 & 1 & 3 & 4 & 0 & 0 \\ 0 & 4 & 0 & 3 & 0 & 4 & 0 & 1 \\ 1 & 0 & 4 & 3 & 3 & 3 & 0 & 0 \\ 3 & 0 & 0 & 0 & 4 & 3 & 0 & 1 \\ 3 & 0 & 0 & 0 & 4 & 3 & 0 & 0 \\ 4 & 0 & 2 & 0 & 0 & 3 & 0 & 2 \\ 3 & 0 & 0 & 1 & 0 & 0 & 0 & 0 \\ 4 & 3 & 0 & 3 & 3 & 4 & 0 & 1 \\ 4 & 0 & 0 & 0 & 4 & 3 & 0 & 0 \\ 0 & 3 & 0 & 4 & 0 & 4 & 0 & 4 \\ 4 & 0 & 4 & 4 & 4 & 4 & 1 & 2 \\ 4 & 2 & 0 & 0 & 4 & 4 & 0 & 1 \\ 4 & 2 & 2 & 0 & 4 & 4 & 2 & 0 \\ 4 & 1 & 0 & 2 & 0 & 4 & 0 & 0 \\ 4 & 0 & 0 & 1 & 0 & 0 & 0 & 2 \\ 4 & 4 & 4 & 4 & 4 & 4 & 0 & 0 \\ 3 & 2 & 0 & 0 & 4 & 4 & 0 & 0 \end{pmatrix}$
$X5 = \begin{pmatrix} 0 & 3 & 1 & 3 & 1 & 3 & 1 & 4 \\ 4 & 0 & 4 & 4 & 4 & 4 & 0 & 0 \\ 3 & 0 & 0 & 1 & 3 & 4 & 1 & 1 \\ 4 & 0 & 2 & 0 & 4 & 4 & 1 & 0 \\ 4 & 0 & 1 & 1 & 0 & 4 & 0 & 2 \\ 3 & 0 & 0 & 1 & 1 & 0 & 0 & 1 \\ 4 & 3 & 3 & 4 & 4 & 3 & 0 & 1 \\ 3 & 1 & 2 & 0 & 4 & 4 & 1 & 0 \\ 0 & 0 & 0 & 3 & 0 & 3 & 0 & 3 \\ 3 & 0 & 3 & 3 & 3 & 3 & 0 & 1 \\ 4 & 0 & 0 & 0 & 3 & 4 & 0 & 0 \\ 3 & 1 & 0 & 0 & 3 & 3 & 1 & 1 \\ 3 & 1 & 0 & 2 & 0 & 4 & 0 & 0 \\ 4 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 3 & 3 & 4 & 3 & 3 & 3 & 0 & 0 \\ 0 & 0 & 0 & 0 & 3 & 3 & 0 & 0 \\ 0 & 4 & 0 & 4 & 0 & 3 & 0 & 3 \\ 3 & 0 & 4 & 3 & 3 & 4 & 0 & 0 \\ 4 & 0 & 0 & 2 & 3 & 4 & 1 & 0 \\ 4 & 0 & 0 & 0 & 1 & 4 & 0 & 0 \\ 4 & 0 & 0 & 0 & 0 & 4 & 2 & 2 \\ 4 & 1 & 1 & 0 & 1 & 0 & 1 & 0 \\ 4 & 4 & 4 & 2 & 4 & 3 & 0 & 0 \\ 3 & 0 & 1 & 0 & 0 & 4 & 2 & 0 \end{pmatrix}$	$X6 = \begin{pmatrix} 0 & 1 & 0 & 4 & 0 & 3 & 0 & 3 \\ 4 & 0 & 3 & 3 & 4 & 3 & 2 & 0 \\ 3 & 1 & 0 & 0 & 3 & 3 & 1 & 0 \\ 4 & 0 & 0 & 0 & 3 & 4 & 0 & 0 \\ 3 & 0 & 0 & 0 & 0 & 3 & 1 & 1 \\ 3 & 1 & 1 & 1 & 0 & 0 & 0 & 0 \\ 3 & 4 & 3 & 3 & 3 & 3 & 0 & 0 \\ 3 & 0 & 0 & 1 & 3 & 4 & 0 & 0 \\ 0 & 4 & 0 & 3 & 0 & 4 & 0 & 1 \\ 1 & 0 & 4 & 3 & 3 & 3 & 0 & 0 \\ 3 & 0 & 0 & 0 & 4 & 3 & 0 & 1 \\ 3 & 0 & 0 & 0 & 4 & 3 & 0 & 0 \\ 4 & 0 & 2 & 0 & 0 & 3 & 0 & 2 \\ 3 & 0 & 0 & 1 & 0 & 0 & 0 & 0 \\ 4 & 3 & 0 & 3 & 3 & 4 & 0 & 1 \\ 4 & 0 & 0 & 0 & 4 & 3 & 0 & 0 \\ 0 & 3 & 0 & 4 & 0 & 4 & 0 & 4 \\ 4 & 0 & 4 & 4 & 4 & 4 & 1 & 2 \\ 4 & 2 & 0 & 0 & 4 & 4 & 0 & 1 \\ 4 & 2 & 2 & 0 & 4 & 4 & 2 & 0 \\ 4 & 1 & 0 & 2 & 0 & 4 & 0 & 0 \\ 4 & 0 & 0 & 1 & 0 & 0 & 0 & 2 \\ 4 & 4 & 4 & 4 & 4 & 4 & 0 & 0 \\ 3 & 2 & 0 & 0 & 4 & 4 & 0 & 0 \end{pmatrix}$



**Table 4.** Personal characteristics of the participants

Category	specification	Frequency	Percent (%)	Country of origin
<b>Age (in year)</b>	20 – 30	1	6.67	Afghanistan , India, Pakistan, Iran, Sari Lanka, Syria, Vietnam
	31 - 40	4	26.67	
	41 - 50	6	40	
	Above 50	4	26.67	
<b>Level of education</b>	Higher vocational school	3	20	
	Undergraduate	9	60	
	Master	3	20	
<b>Duration of stay (in years)</b>	Less than 1	0	0	
	1 - 10	1	6.67	
	11 - 20	11	73.33	
	21 - 30	1	6.67	
	Above 31	2	13.33	
<b>Duration of business involvement (in year)</b>	Less than 1	1	6.67	
	1 - 5	1	6.67	
	6 - 10	5	33.33	
	Above 10	8	53.33	
<b>Type of s elf-employment</b>	Restaurant	6	40	
	Super Market	4	26.67	
	Translation company	2	13.33	
	Others	3	20	
<b>Gender</b>	Male	15	100	

Source: Sabary *et al.* (2023).

**Table 5.** Initial direct – relation or average matrix (A)

	B1	B2	B3	B4	B5	B6	B7	B8
<b>B1</b>	0	2.6	0.667	3.333	0.667	3.4	0.667	2.867
<b>B2</b>	3.333	0	3.667	3.6	3.667	3.667	0.333	0.267
<b>B3</b>	3.467	0.267	0	0.4	3.067	3.667	0.4	0.467
<b>B4</b>	3.533	0.4	0.4	0	3.067	3.8	0.467	0.267
<b>B5</b>	3.867	0.467	0.533	0.8	0	3.067	0.6	0.533
<b>B6</b>	3.467	0.4	0.267	0.467	0.533	0	0.333	0.467
<b>B7</b>	3.6	3.4	3.067	3.067	3.533	3.133	0	0.533
<b>B8</b>	2.867	0.467	0.333	0.2	3.133	3.667	0.6	0

**Table 6.** Normalized direct – relation matrix

	<b>B1</b>	<b>B2</b>	<b>B3</b>	<b>B4</b>	<b>B5</b>	<b>B6</b>	<b>B7</b>	<b>B8</b>
<b>B1</b>	0	0.106553	0.027335	0.136593	0.027335	0.139339	0.027335	0.117495
<b>B2</b>	0.136593	0	0.150281	0.147535	0.150281	0.150281	0.013647	0.010942
<b>B3</b>	0.142084	0.010942	0	0.016393	0.125692	0.150281	0.016393	0.019139
<b>B4</b>	0.144789	0.016393	0.016393	0	0.125692	0.155731	0.019139	0.010942
<b>B5</b>	0.158477	0.019139	0.021843	0.032786	0	0.125692	0.024589	0.021843
<b>B6</b>	0.142084	0.016393	0.010942	0.019139	0.021843	0	0.013647	0.019139
<b>B7</b>	0.147535	0.139339	0.125692	0.125692	0.144789	0.128396	0	0.021843
<b>B8</b>	0.117495	0.019139	0.013647	0.008196	0.128396	0.150281	0.024589	0

**Table 7.** Total relation – matrix (T)

	<b>B1</b>	<b>B2</b>	<b>B3</b>	<b>B4</b>	<b>B5</b>	<b>B6</b>	<b>B7</b>	<b>B8</b>	<b>r</b>
<b>B1</b>	0.137365521	0.141162	0.068941	0.193412	0.116874	0.263147	0.047934	0.147252	1.116089
<b>B2</b>	0.296707755	0.053782	0.184676	0.218413	0.238066	0.306361	0.041314	0.064283	1.403603
<b>B3</b>	0.236006159	0.050612	0.026654	0.07147	0.169702	0.240311	0.034212	0.057768	0.886736
<b>B4</b>	0.240823384	0.056948	0.044274	0.057442	0.170896	0.247301	0.037145	0.050614	0.905444
<b>B5</b>	0.235294418	0.057106	0.047378	0.085177	0.049381	0.207441	0.039675	0.057868	0.779321
<b>B6</b>	0.187363893	0.043987	0.029207	0.058152	0.055331	0.063118	0.024308	0.045777	0.507244
<b>B7</b>	0.331812078	0.196332	0.182015	0.22201	0.256011	0.314496	0.031566	0.081191	1.615433
<b>B8</b>	0.211035296	0.056681	0.040956	0.061682	0.171352	0.236222	0.041307	0.036041	0.855277
<b>c</b>	1.876408503	0.656611	0.624102	0.967759	1.227614	1.878398	0.297461	0.540794	

**Table 8.** Identification of the cause and effect barriers

Factors	R	C	R+C	R - C	Identify
B1	1.11609	1.8764085	2.9924985	-0.7603185	Effect
B2	1.4036	0.65661	2.06021	0.74699	Cause
B3	0.88674	0.6241	1.51084	0.26264	Cause
B4	0.90544	0.96776	1.8732	-0.06232	Effect
B5	0.77932	1.22761	2.00693	-0.44829	Effect
B6	0.50724	1.8784	2.38564	-1.37116	Effect
B7	1.61543	0.29746	1.91289	1.31797	Cause
B8	0.85528	0.54079	1.39607	0.31449	Cause

**Figure 1.** Conceptual framework

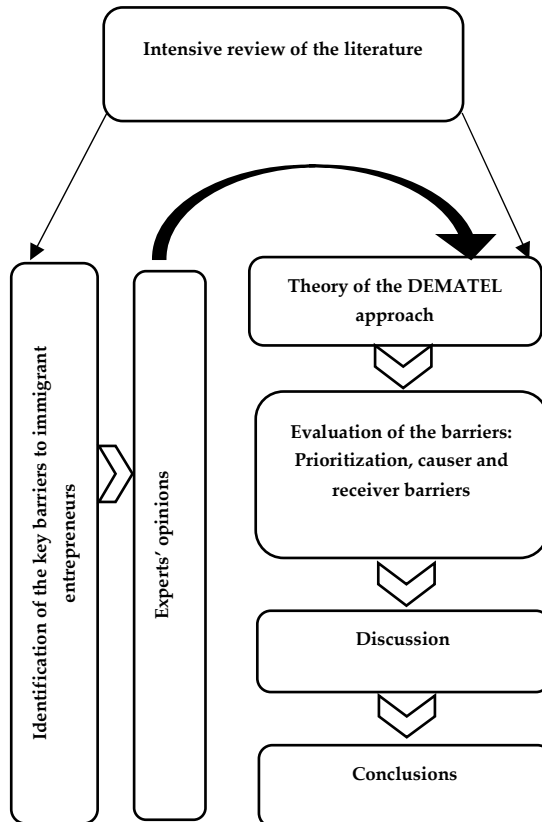


Figure 2. Interrelationship of the main barriers

