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Key Internal Barriers in Manufacturing Industry of Emerging Markets: Systematic Literature Review

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Abstract:

Purpose: *This study aims to identify internal barriers that undermine the competitiveness of the manufacturing industry in emerging countries.*
Design/Methodology/Approach: *The research model of this study is based on the root cause analysis performed using the adapted Ishikawa 8M identification technique. The systematic literature review of research articles published between 2020 and 2025 in scientific journals from the EBSCO database delivered analytical content.*
Findings: *In the analysis, 35 internal barriers were determined and classified into six root cause categories. Money was identified as the key category of internal barriers in manufacturing companies of emerging economies. This group of barriers mainly includes: high costs of technologies and raw materials, lack of access to external funding, and expensive battle with multinationals. The lower priority was attributed to the three following category causes, i.e., Manpower, Method, and Management.*
Practical Implications: *The findings of this study reveal a key category of internal barriers in the emerging market manufacturing industry between the years 2020 and 2025. According to the formulated managerial recommendations, the concepts of implementation of the world class manufacturing and circular economy could help companies to overcome their barriers. The results presented should also be considered by decision-makers responsible for designing a competitive environment and industrialisation of single countries.*
Originality/Value: *The innovative approach of this research involves adopting the Ishikawa 8M analysis technique to segment root causes and determining internal barriers that affect manufacturing competitiveness in emerging markets. The application of systematic review of the literature to identify key internal barriers in the emerging market manufacturing industry is, presumably, to the best knowledge of the author, the first of this type. The main objective of the review was to extract research simultaneously referring to the manufacturing industry, emerging markets, and barriers.*

Keywords: *Strategic management, competitiveness, root cause analysis, Ishikawa analysis technique, quality tool, continuous improvement.*

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1. Introduction

The manufacturing industry is a pillar of many world economies. Since 2020, the manufacturing sector has been affected globally by the consequences of the Covid-19 pandemic. This unpredictable situation triggered serious challenges (Szymoniuk and Skowron, 2021) and huge barriers for many companies. They soon faced new circumstances resulting from the aggression against Ukraine at the beginning of the year 2022 (European Commission, 2024).

The serious game changer, which increased the pace of market adaptation but simultaneously imposed significant burdens on various manufacturing industries, was digital transformation, including the instant proliferation of artificial intelligence models at the end of 2022.

These new business conditions affected emerging markets due to the historical nexus that exists between them and manufacturing (Lautier, 2024). In spite of some exceptions, the relationship on the line of the manufacturing sector and economic development is strong (Bairoch, 1982). During the long era of globalisation, the compelling competence shift occurred, thus the process of production has been contracted to developing nations, whereas industrialised countries became the main centres of knowledge-intensive activities as, e.g., branding, financial services, design, marketing, logistics and supply chain, RandD (Ikome et al., 2022; Kaplinsky and Morris, 2001, p. 101).

Today, due to the attractiveness of investment, emerging countries are the main engines of the world economy (Rubaj, 2023). Since the beginning of the 21st century, they have been international leaders, reaching 4,2% of annual real GDP growth in 2025, the highest in the world versus advanced economies (International Monetary Fund, 2025).

Despite the lack of evidence for the global decline in manufacturing of developing economies (Lautier, 2024), the manufacturing industries are constantly confronted by competitive pressure from global markets. To satisfy the increasing demand for productivity, they seek better methods to improve operating procedures, reduce production costs, and maintain product quality (Ikome et al., 2022; Szymoniuk and Skowron, 2021).

However, some of them fail at this point. According to the findings from 2022, there is a “need for urgent actions that will mitigate the decline of the industry’s competitiveness” in emerging markets (Ikome et al., 2022). To solve this problem and establish corporate resilience in times of high as well as difficult-to-predict risk within weakened economic systems (World Economic Forum, 2024), causing uncertainty in decision-making (Jankowska-Mihułowicz and Kowalska, 2025), the identification of key internal barriers influencing the competitiveness of the manufacturing companies should be performed.

Internal barriers to the manufacturing industry have not been analysed in a systematic way regarding emerging markets so far. The scarcity of systematic knowledge about the internal barriers that influence the competitiveness of the manufacturing industry in emerging markets is the research problem examined in this paper.

This study asked the following research question: What internal barriers are typical for the manufacturing industry in emerging markets? The research thesis of this work claims that *there is a key category of barriers that decreases competitiveness in manufacturing companies from emerging economies*.

To examine this thesis, the following research aim was formulated in the study: to identify internal barriers that undermine the competitiveness of the manufacturing industry in emerging nations. To determine the most influential barriers, the segmentation and prioritising method are used (Kumar and Krishna, 2025). For this purpose, in this article the root cause analysis method was applied, based on the 8M adapted root cause identification process of Ishikawa.

The reference database for the identification of internal barriers was completed by the systematic literature review covering the six years between 2020 and 2025. It should be noted that the adapted Ishikawa analysis technique for segmenting root causes and, presumably also, a systematic literature review has been used for the first time to identify internal barriers in the manufacturing industry of emerging markets. The rationale for the systematic review of literature was the desire to gain a broad perspective on the analysed context.

The findings of this study reveal key internal barriers in the emerging markets manufacturing industry. The presented research model and managerial recommendations for implementation of the world class manufacturing or circular economy concept can be useful to managers, business-to-business (B2B) services, and consulting enterprises for more effective strategic planning to overcome the barriers. The results presented should also be reviewed by decision-makers responsible for the competitiveness and industrialisation of individual nations.

2. Literature Review

All factors that reduce the chance of taking action are called barriers (Panjaitan *et al.,* 2023). Companies that are eager to bolster their competitiveness seek opportunities that mitigate the negative effect of barriers. The analysis of external and internal barriers, along with the examination of drivers, is a prerequisite for strategic planning and gathering company-wide benefits. Scientific investigation of barriers in the manufacturing industry is mainly contextual and focused on, e.g.:

- Covid-19 pandemic (Badhotiya *et al.,* 2022),
- Industry 4.0 and the circular economy (Cugno *et al.,* 2021; P. Kumar *et al.,* 2021),

- industrial symbiosis (Hossain *et al.,* 2024; Sellitto *et al.,* 2021).
- green human resource management implementation (Fayyazi *et al.,* 2015).

A similar case regards manufacturing in emerging markets as, e.g.:

- implementation of reverse logistics (Waqas *et al.,* 2018),
- new product development (Duran *et al.,* 2021),
- artificial intelligence (Sharma *et al.,* 2022),
- Industry 5.0 implementation (Mukherjee *et al.,* 2023).

Despite sufficient recognition of barriers in the manufacturing industry, it is difficult to find studies geared both to the emerging market and internal barriers. Furthermore, articles incorporating a systematic review of literature on internal barriers in the emerging market manufacturing industry, regardless of contextual and spatial connotations, also appear absent.

3. Research Methodology

To identify internal barriers that undermine the competitiveness of the manufacturing industry in emerging nations, a systematic literature review was performed in the article. This method is one of the best for identifying conceptual content (Badhotiya *et al.,* 2022). The bibliographic investigation embraced English-language research articles available in Academic Search Ultimate of the EBSCO database and covered six years from 2020 to 2025.

For this purpose, the literature investigation included the following keywords: barrier, obstacle, constraint, threat, problem, risk, fault, weakness, challenge, and hindrance. Similarly, in the case of the manufacturing industry and emerging markets, the most prevalent synonyms were introduced. All literature review criteria are presented in Table 1.

Table 1. *Inclusion criteria for the systematic literature review*

Criteria	**Included**
Databases:	EBSCO (Academic Search Ultimate)
Publications dates:	01.01.2020–31.12.2025
Language:	English
Source type:	scientific journals
Paper type:	research articles (excluding reviews)
Scrutinized area:	manufacturing sector or industry or company or business or enterprises or firms
Relevance to:	emerging or developing economies or industry or markets
Availability:	full text
Scope:	title, abstract, keywords
Search query:	(manufacturing OR "manufacturing sector" OR "manufacturing industry" OR "manufacturing company" OR "manufacturing

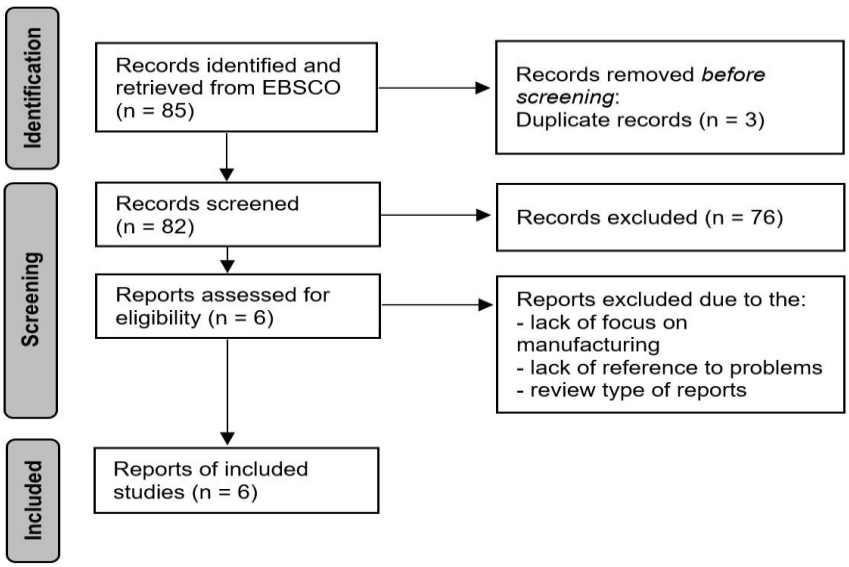
	business" OR "manufacturing enterprise" OR "manufacturing firm") AND (“emerging market” OR “emerging economies” OR “emerging countries” OR “developing market” OR “developing economies” OR “developing countries”) AND (barrier OR obstacle OR constraint OR threat OR problem OR risk OR fault OR weakness OR challenge OR hindrance)

Source: *Author’s own work.*

Finally, of the 85 identified studies, which met the inclusion criteria, the group was selected for further consideration.

The literature review model is presented in Figure 1.

Figure 1*. Systematic literature review flow diagram (adapted from the PRISMA 2020 statement (Page et al., 2021)).*



Note: *All scientific articles included in the systematic literature review were retrieved from EBSCO platform and are available for registered users.*
Source: *Author’s own adaptation.*

The studies selected in the systematic literature review have been introduced into the final analyses. The approach applied for this purpose — root cause analysis (also called failure analysis or accident investigation) — was based on the Ishikawa root cause identification process, a well-established method within the quality management sciences. This technique is often called: cause-and-effect diagram, cause-and-effect analysis, fault tree diagram, fishbone diagram, Ishikawa diagram/diagramming, Ishikawa framework, herringbone diagram, and Fishikawa. It was invented by Kaoru Ishikawa to understand the root causes of problems in enterprises using graphical diagramming of their categories and then analysing them.

As a quality tool linking a cause and its effect (problem), this method is useful in structured problem-solving. The causes, also called hypotheses, are often numerous, whereas the effect is a single problem, usually called a failure, defect, accident, issue, symptom, result, or incident. The results of the analysis should generate solutions in the form of corrective or preventive actions (Tahseen *et al.,* 2023).

The Ishikawa root cause analysis was originally designed to improve production and operation processes in manufacturing (Gartlehner *et al.,* 2017), but today it is used in all sectors (Antony *et al.,* 2021). The effective application of this tool depends on several success factors, that is, top management support, planned training that eliminates the lack of understanding, user aims, and team cooperation (Antony *et al.,* 2021).

In addition to the basic 5M Ishikawa concept that embraces the following factors: Man, Methods, Machinery, Materials, and Management (Ciecińska, 2024), many new versions have been proposed so far, etc., (Luca, 2016):

- "Material, Personnel, Process, External factors, Management.
- Software, Users, Hardware, Environment.
- Equipment, Process, People, Materials, Environment, Management.
- People, Material, Method, Environment, Machine.
- Working conditions, Raw materials, Management, Technology, Machine, Workers.
- Measurements, Materials, Personnel, Environment, Methods, Machines.
- Transport, Premises, People, Clients, Finance, IT.
- Physical evidence, People, Place, Service, Process, Promotion, Price, Productivity and Quality.
- Equipment, Policies, Procedures, People, Environment, Measurement.
- Measurement, Material, Man, Mother nature, Machine, Method.
- Environment, Material, People, Equipment, Process.
- Technology, Procedures, Policies, People".

To categorise the results in this study, the modified Ishikawa root cause identification process was applied. The analytical method embraced firm-level internal factors divided into 8 categories, that is:

- Manpower – human resources, worker, employees, qualifications, competencies, skills, training, salaries, motivation, human error, safety, etc.
- Methods – processes, standards, procedures, instructions, etc.
- Machines – age and condition, machine wear, maintenance, calibration, operation, software, technology, etc.
- Materials – parts, availability, information, supplies, quality, storage conditions, etc.
- Management – planning, decision-making, organising and resource

allocation, motivating, leadership, unplanned downtime, rework rate, etc.
- Measurement – measurement or monitoring methods and errors, calibration of devices, indicators, collected data, etc.
- Mother nature – natural and working environment, light, noise, temperature, humidity, vibration, noise, contaminants, etc.
- Money – costs, investments, financial resources, etc.

For displaying the results of the categorisation, the summary of findings table was used. This data clustering approach is sometimes deemed more useful than a fishbone diagram.

The resultant catalogue of root causes in the form of manufacturing barriers in emerging markets is presented in the next section.

4. Research Results and Discussion

The problem scrutinised in this work was the scarcity of systematic knowledge on the internal barriers that influence the competitiveness of the manufacturing industry in developing markets. After the systematic literature review, only six studies were included for further analysis performed using the adopted Ishikawa model, consisting of eight categories of root causes. Finally, all 35 barriers determined were classified into six categories according to Table 2.

Table 2. *Internal barriers in the manufacturing industry of emerging nations*

Category	Barriers	Sources
Manpower	• "lack of qualified personnel and skills", • "difficulty in finding RandD cooperation partners",	(Arman et al., 2022)
	• "pessimism of physicians about home-made high-tech medicines",	(Babaee et al., 2023) (Erboz, 2020)
	• "problem with finding highly qualified employees for digital technologies", • "lack of motivation (taking shortcuts, employee resistance)", • "lack of understanding of processes", • "lack of human resources".	(Maisiri et al., 2023)
Method	• "bureaucracy and far-reaching standards",	(Erboz, 2020)
	• "non-compliance of standards",	(Farooq et al., 2024)
	• "paper-based documentation system",	(Maisiri et al., 2023)
	• "complexity in adoption".	(Panjaitan et al., 2023)
Materials	• "lack of information on technology", • lack of information on market",	(Arman et al., 2022)
	• "lack of technological knowledge",	(Babaee et al., 2023)
	• "difficulty or uncertainty in obtaining	(Panjaitan et al., 2023)

	appropriate quality materials from external parties".	
Management	• "bureaucracy and far-reaching standards",	(Babaee et al., 2023)
	• "propaganda battle with multinationals", • "lack of long and short-term strategies", • "lack of time",	(Erboz, 2020)
	• "low adoption of digital systems", • "lack of training", • "lack of management commitment",	(Maisiri et al., 2023)
	• "lack of maintaining the project results", • "lack of a clear, corporate framework", • "changes in operational management".	(Panjaitan et al., 2023)
Measurement	• "no finance and stock audit",	(Farooq et al., 2024)
	• "lack of regular system internal audits".	(Maisiri et al., 2023)
Money	• "high costs", • "lack of funds from outside",	(Arman et al., 2022)
	• "lack of access to facilities and finance",	(Babaee et al., 2023)
	• "price battle with multinationals",	(Erboz, 2020)
	• "costs of technologies (highly capital intensive technologies)",	(Farooq et al., 2024)
	• "high cost of raw materials",	(Maisiri et al., 2023)
	• "lack of capital resources", • "limited capital availability".	(Panjaitan et al., 2023)

Source: *Author's own work.*

The summary of findings consists of six root cause clusters concerning the manufacturing barriers in emerging markets. In the resultant catalogue, only two factor groups, i.e., Machine and Mother nature were not identified.

When analysing the number of reports referring to single categories, some tendencies can be noticed. All scrutinised reports mentioned Money as the compelling category of barriers in the manufacturing industry of emerging markets. Among the Money root causes were: high costs of technologies and raw materials, lack of access to external funding, and expensive battle with multinationals.

Three of the causes, i.e., Manpower, Method, and Management, are pointed out by four reports, whereas the categories of Materials and Measurement are respectively by three and two reports.

The significance of Money is proven utmost among the remaining five root cause categories when analysing the scale of interest. Consequently, the research thesis of this work on the existence of a key category of barriers in the manufacturing companies of emerging economies can be positively verified.

The results presented give an answer to the research question of this study in identifying internal barriers in the manufacturing industry of emerging markets. At the same time, this solves the research problem by increasing knowledge about internal barriers influencing the competitiveness of the manufacturing industry. Thus, the research aim of this work can be acknowledged as accomplished.

Due to the scarcity of previous investigations on root cause analysis based on the Ishikawa 8M method in the context of internal barriers in the manufacturing of emerging markets, the possible discussion could refer to more or less similar cases.

In the 2021 study on "data quality problems affecting administrative hospital data" (Carvalho *et al.,* 2021), the systematic review included 77 reports for examination, resulting in the elicitation of 105 potential root causes. One key category, that is Personnel (25.7%) was identified among the group of five others "Material, Method, Machine, Mission and Management" (Carvalho *et al.,* 2021).

Another case study regards a company in the ceramic industry focused on improving the order fulfilment process. The root cause analysis performed by the group of employed managers according to the criterion of internal control ease selected the following four categories for improvement, i.e., Manpower, Material, Method, and Measurement *(Maia et al.,* 2019).

In the case of the excavator, the manufacturing industry of India, after root cause analysis, the category of Process was found as the key barrier. Its improvements resulted in numerous benefits as, e.g., reduction of labour dependency for iron from 5 to 2 workers, a reduction of defects from 60 to 3, eliminating bottlenecks in the manufacturing process, and reducing processing time from 7 days to 1 day.

Root cause analysis is an analytical tool used to perform a review of critical incidents in a system. "It includes the identification of the root and contributory factors, determination of risk reduction strategies, and development of action plans along with measurement strategies to evaluate the effectiveness of the plans" (Mahto, 2008). To this end, the results of the presented study should be useful to top management during strategic planning.

The resulting managerial recommendation for organisations which incline to continuous improvement is to adopt the world class manufacturing (WCM) and circular economy (CE) practices. As two facultative strategies in their fundamentals, although CE became mandatory for manufacturing in some regions (Abubakar, 2018; Bartoszczuk, 2023), they are both highly acknowledged due to their numerous benefits conveyed to companies.

WCM helps to integrate strategic and operational dimensions throughout the company *(Maisiri et al.,* 2023). Similarly beneficial is the implementation of the CE closed-loop manufacturing in enterprises due to the reduction of input materials costs (Šebo

et al., 2021) and all positive effects resulting from integration of sustainability objectives with business processes as, e.g. enhancing product quality, increasing resource efficiency and fostering working conditions, reducing environmental impacts (Kunecová *et al.,* 2024).

Governmental decision-makers should also consider the results when reviewing industrialisation public policy.

5. Conclusions

The scarcity of knowledge on factors affecting corporate resilience and uncertainty in decision-making among manufacturing companies in many emerging markets deserves investigation. Consequently, the question of the cause of the notified decrease in manufacturing competitiveness is critical. To determine internal barriers facing manufacturing companies in the presented research, the root cause analysis was applied based on the adapted Ishikawa 8M method.

Distinct differences among the six categories of barriers were identified after the analysis of reports collected through a systematic literature review. Thus, the thesis formulated on the key role of one category of internal barriers was accepted. After the examination of the studies included in the analysis, the research aim of this paper was achieved.

The results provided systematic knowledge on the main barriers that undermine the competitiveness of the manufacturing industry in emerging nations between the years 2020 and 2025. As revealed, the main root cause category is Money. Among the next group of evenly rated categories were Manpower, Method, and Management.

This research improves the understanding of the role of internal barriers in emerging market manufacturing industries. The set of identified obstacles informs a priori the C-level managers about the priority root causes that deserve attention in strategic planning.

The implementation of a world class manufacturing system in enterprises oriented to continuous improvement, as well as the circular economy concept, is the final recommendation of this paper. For the political decision-makers and government units, the presented results can be informative when developing financial instruments for manufacturing production.

It is noteworthy that the sample size limited the quality and scope of possible conclusions in this study.

The catalogue of vulnerable factors depicted in this article puts the spotlight on the potential education fields and future research areas. The next investigation should consider the relationships between factors that influence the manufacturing industry

in the context of a single emerging country. There is also a knowledge gap on the lack of research focused on other scientific databases and sectoral reports. It would be worth scrutinising temporal dynamics to examine trends in this context, along with modelling mechanisms and correlations between identified factors. Moreover, further comparative studies could confront the presented results with the situation of advanced and developed economies.

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