

**RESEARCH TITLE**

**NEW PRODUCT DEVELOPMENT AND INDUSTRIAL  
COMPETITIVENESS IN INDUSTRIAL SECTORS  
A SYSTEMATIC LITERATURE REVIEW**

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**Abstract**

This article sets out the findings of a systematic review of the research literature on the relationship between industrial competitiveness and new product development in the industrial sector. The review is important since it originates from growing industrial competitiveness in generating new industrial products and achieving benefits for customers, which helps society and creates economic success for the development of a country. The method of a systematic literature review of past studies was adopted. The importance of industrial competition originates from its importance in pushing and urging the owners of industrial enterprises and factories to enhance their industrial products. The findings support the view that manufacturers always and continuously aim to create and maintain a competitive position in the market to maximize their earnings and expand their market share. This interest was also reflected in the research and innovation of factories to produce new industrial products, innovate new technologies in manufacturing items, and elevate their standards to the best. All the articles emphasize a strong relationship between new product development and industrial competitiveness in the industrial sector, which are significant to the growth of the economy.

**Key Words:** Industrial competitiveness, new product development, industrial sectors.

## تطوير منتج جديد والقدرة التنافسية الصناعية في القطاعات الصناعية : مراجعة منهجية أدبية

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### المستخلص

توضح هذه المقالة نتائج المراجعة المنهجية للأدبيات البحثية حول العلاقة بين القدرة التنافسية الصناعية وتطوير المنتجات الجديدة في القطاع الصناعي. تعتبر المراجعة مهمة لأنها تتبع من زيادة القدرة التنافسية الصناعية في توليد منتجات صناعية جديدة وتحقيق فوائد للعملاء، مما يساعد المجتمع ويخلق نجاحًا اقتصاديًا لتنمية بلد ما. تم اعتماد طريقة المراجعة المنهجية للدراسات السابقة. تتبع أهمية المنافسة الصناعية من أهميتها في دفع وحث أصحاب المنشآت الصناعية والمصانع على الارتقاء بمنتجاتهم الصناعية. تدعم النتائج بأن الشركات المصنعة تهدف دائمًا وبشكل مستمر إلى خلق والحفاظ على مركز التنافسية في السوق وذلك لزيادة أرباحها إلى أقصى حد وتوسيع حصتها السوقية. انعكس هذا الاهتمام أيضًا في البحث وابتكار المصانع لإنتاج منتجات صناعية جديدة، وابتكار تقنيات جديدة في تصنيع الأصناف ورفع معاييرها إلى الأفضل. تؤكد جميع المقالات التي تم مراجعتها على العلاقة القوية بين تطوير المنتجات الجديدة والقدرة التنافسية الصناعية في القطاع الصناعي، والتي تعتبر مهمة لنمو الاقتصاد في البلد.

**الكلمات المفتاحية:** التنافسية الصناعية، تطوير المنتجات الجديدة، القطاعات الصناعية.

## Introduction

Product development is one of the priorities of industrial organizations in the modern period to acquire a prominent position in market competitiveness. This article discusses research that studied the association between product development and industrial competitiveness using a systematic review method. The purpose was to provide the results of many types of research that studied the link between product development and industrial competitiveness.

Increasing competitiveness by raising the quality of current products and developing new industrial products adhering to the standards and quality requirements in the markets. Through a package of services that leads to improving the quality of the final product and ensuring its compliance with the standards in that country. Thus, it contributes to increasing market share, increasing profits, and achieving diversification in production by providing the necessary expertise to develop existing products and develop new industrial products (Silinevica, Igavens & Amantova-Salmane (2016).

To increase the nation's economic growth, the capacity to compete in the industrial sectors is taken into consideration. Competitiveness is the ability to compete with others in the same industry sector (Milner, 2021). The degree of comparative advantages in industrialized nations can be described in terms of institutional quality, human capital, and the capacity to acquire "technical knowledge". Technical knowledge can outperform rivals by using innovative production techniques and provide new goods and services.

The process of taking a novel idea and converting it into a competitive product is known as new product development. Starting with the initial concept of the product, it goes through several stages of improvement before it is finally developed into a finished good that is ready for selling (Youssef & Webster, 2022).

## Methodology

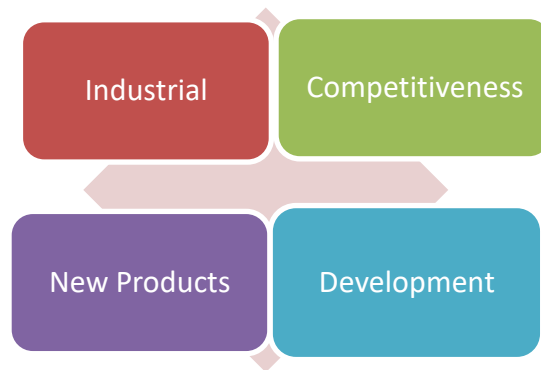
Relating to PRISMA 2020 Checklist, the researcher makes eligibility criteria; Specifies the inclusion and exclusion criteria for the review. Then he makes an Excel for information sources, Search strategy, and Selection process, then specifies the methods used to collect data from reports, lists the data items then studies the risk of bias assessment, then finds the effect measuring, and finally describes any techniques applied to determine the level of confidence in the body of evidence supporting a conclusion.

During the planning phase, the researcher specifies the objective and emphasizes the scope of the research review. For this reason, the researcher uses scholarly articles that have been carefully chosen from the best consensus international journals and that present substantial contributions to the fields of new developing products and industrial competitiveness. The papers are located by running particular keyword searches in the research Scopus and Google Scholar. Conference papers, novels, and master's dissertations are not included in the sampling to maintain homogeneity and consistency because of their less significant influence on academic writing.

The initial selection criteria for this article are based on the Scopus database and Google Scholar is scrutinized for performing ad-hoc queries using a string of words consistent with the main theme of the literature review, i.e., industrial competitiveness. Among others, the words "competitiveness", "industrial", and "development" were searched alone and in combination with the term "new product" in the main title, in the abstract, and the keywords of each paper (see Figure 1). The analysis focuses on many journals, chosen based on their academic reputation and relevance in the domain of industrial competitiveness. After these

queries, a preliminary database is many scientific papers. Then, the researcher filters them by the articles review and subject area relating to economics, econometrics relating to the specific title of review articles from the Scopus database relating 909 scientific papers is defined, and additional records identified through other resources are 130 papers, then make a filter on the “open access & open archive” and excluded the duplicated and not open access and for other reasons. Then, the articles included in the research will take twenty-three articles with a systematic review (see Figure 2).

**Figure 1: The Initial Selection Criteria**

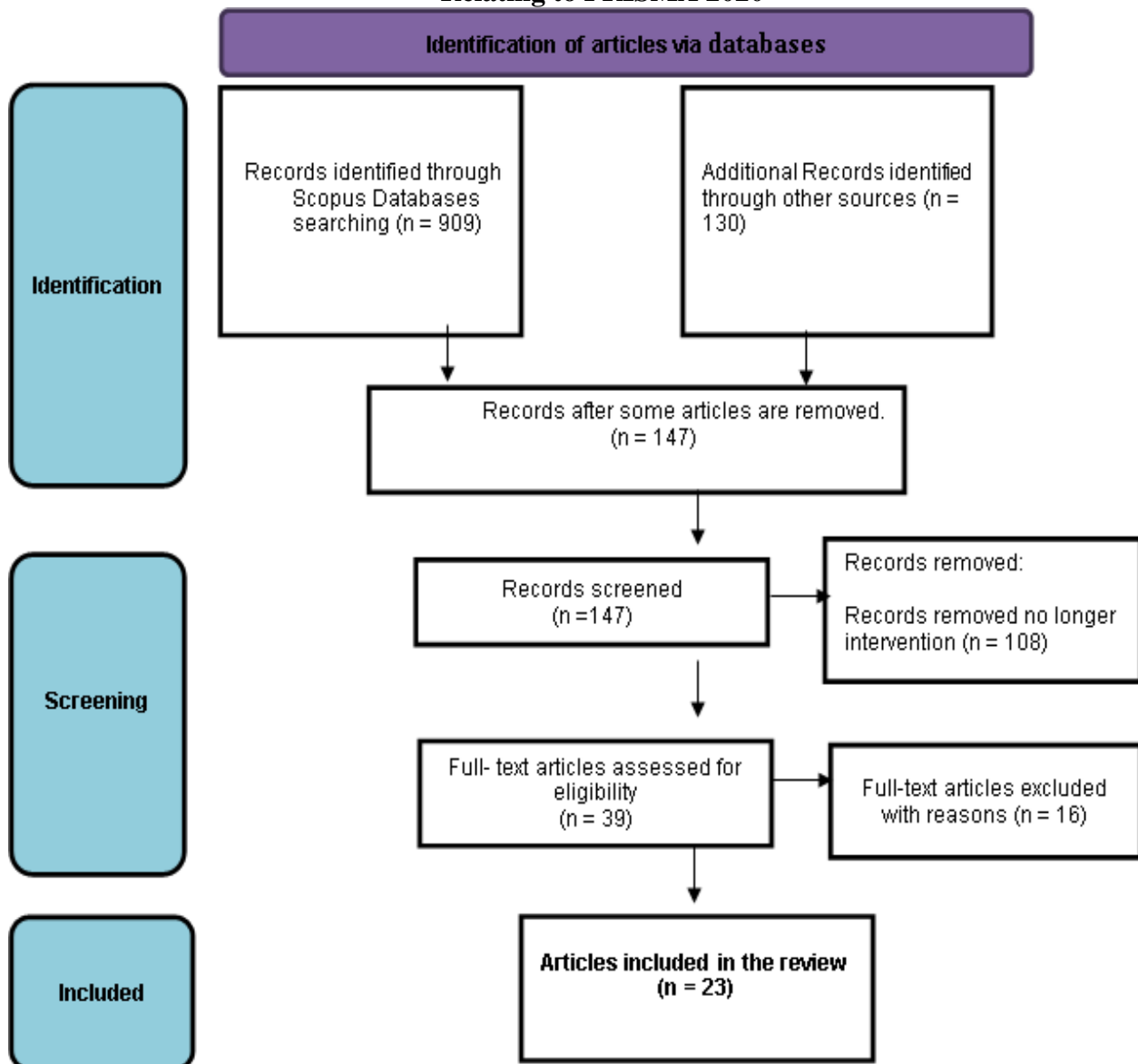


Source: Combined by the researcher relating to the article.

Details of the Search Strategy with Keywords until 23/03/2023:

TITLE-ABS-KEY ( ( ( ( "Competitiveness\* industrials\*" OR "Competitiveness\* industry\*" OR "new\*product\*" OR "New\*Products\*" OR "development\*" OR "Development\* products\*" OR "number of enterprises\*" OR "new products\*" OR "new entrant\*" OR "entrance" OR "new firms" ) AND ( "industry\*competitive\*" OR "industrial\*competitiveness\*" OR "industrial\* competitive\*" OR "industrial\* competitive\*" OR "industry\*manufacture\*" OR "industrial\*competitive\*" OR "industrial\* contestant\*" OR "new\* innovation\*" OR "research and development\* expenditure\*" OR "enterprise\* research and development\*" ) AND ( "firms\*" OR "enterprises\*" OR "company\*" OR "industrial\* owners\*" OR "owners\* customers\*" OR "industry\* owners\*" OR "firm\* enterprise\*" OR "firms\* Company\*" OR "enterprise\* community\*" ) ) ) ) ).

**Figure 2: Flow Diagram for New Systematic Reviews Which Included Searches of Databases Relating to PRISMA 2020**



Source: PRISMA chart for reporting systematic reviews relating to the article (Moher et al., 2009).

The researcher analyzed the literature research by basing it on the trends in industry competitiveness and identified the industrial competitiveness and new products. The researcher used an inclusive approach by considering the variety of theoretical arguments produced by highly cited contributions when defining and naming the thematic boundaries of important industry trends. These market trends offer some new product development analytical vantage points for the discussion of industry competitiveness and the potential link between developing new products and significant changes in industrial sectors.

**Table 1: Criteria for Consideration of the Methodology for the Systematic Review**

Criteria	Results
Types of studies	All cross-sectional and qualitative studies.
Participants/population	The researcher included studies that focused on the industrial sector and excluded other non-industrial sectors such as the agriculture and tourism sectors.
Interventions	Studies of newly developing products and consumer attitudes that profit from industrial sectors was also included.
The main result	The study examined increasing levels of industrial competitiveness, skills, attitudes, and consumer practice. The study collected a large amount of research on the impact of developing new goods on market share and company profitability. Formulating recommendations and enhancing search strategies and research methodologies to uncover papers were further findings.
Search Methods for Identification of Studies	To increase the findings from other databases, the researcher examined several databases, including SCOPUS and Google Scholar. Publications and related literature were taken from websites. The researcher looked through all English-language publications.
Screening	The researcher reviewed searched and screened the research studies for inclusion based on their titles and abstracts. Furthermore, the full-text screening was done by the author, but in the case of discrepancies during data screening, an experienced researcher was consulted.
Data Extraction	The PRISMA checklist 17 served as the guide for data extraction. Using a data extraction form made in an Excel sheet, the researcher independently extracted data from the listed studies. The statistics were then contrasted. In the event of disagreements throughout the data extraction process, an expert researcher was consulted.
Data Analysis	A structured narrative review of the studies is presented in this review.

Source: Compiled by the researcher.

## Results

The search retrieved 909 records, and 130 records are from additional records identified through other sources. 892 records were excluded following title and abstract screening and for other reasons (see Figure 2). About 39 were selected for full-text articles assessed for eligibility, and 16 articles were excluded following full-text screening based on the pre-specified inclusion and exclusion criteria. In the end, 23 potentially relevant articles were selected to be analyzed in this article.

There was a total of twenty-three articles that fulfilled the criteria and were qualified in qualitative synthesis and quality assessment (Youssef & Webster, 2022; Prasetyo, Setyadharma, & Kistanti, 2020a; Silinevica et al., 2016; Prasetyo, 2019; Kazimierska and Grębosz, 2017; Ebarefimia, 2014; Makridis & McGuire, 2023; Manab & Aziz, 2019; Agustia, Haryanto, Permatasari, & Midiantari, 2022; Bansal & Sharma, 2022; Dzikowski, 2022; Prasetyo, Setyadharma, & Kistanti, 2020b; Wang, 2021; Abdulkareem & Naimi, 2022; Chang

& Zhang, 2019; Talari & Khoshroo, 2023; Harmancioglu, McNally, Calantone, & Durmusoglu, 2007; Hemmert, 2023; Birasnav & Bienstock, 2019; Bratianu, Stănescu, & Mocanu, 2022; Chen, 2022; Sadeghi, Afrazeh, & Mahootchi, 2022; Ferreira, Coelho, & Moutinho, 2021).

Six of these studies purposed the value of employing the strategy to structure a company's new product development process successfully used to enhance the new product development process in an actual industrial setting (Youssef & Webster, 2022; Ebarefimia, 2014; Prasetyo et al., 2020a; Ferreira et al., 2021; Talari & Khoshroo, 2023; Abdulkareem & Naimi, 2022). The articles determine the role of innovation in developing new products, which is crucial for any organization functioning in the manufacturing and industrial sectors to achieve sustainable economic growth, it will boost regional competitiveness, productivity, and economic growth, also Recessions are moments of reallocation and disruption that produce new ideas and test the limitations of startup businesses. Additionally, empirical data suggests that spending on R&D and patenting is procyclical rather than countercyclical. Innovations established during recessions affect the direction of future research more than those created during boom times. Other patterns related to R&D configuration can be found in Prasetyo et al. (2020a), Prasetyo (2019), and Makridis & McGuire (2023).

According to one article, findings indicate that social and human capital have positive and significant effects on developing new product research (Prasetyo et al., 2020a). The main concern of the article is that corporations must put forth significant effort and produce new products by paying attention to designers and continuous research and development to make this sustainable and strengthen the competitiveness of industrial companies (Manab & Aziz, 2019).

Three articles mentioned the importance of NPD procedures which go through several stages intending to provide clients with a useful commercial advantage (Abdulkareem & Naimi, 2022; Harmancioglu et al., 2007; Chen, 2022). The ability to successfully implement NPD procedures influences the extent to which businesses can satisfy and surpass demand. For NPD operations, organizational architecture is a crucial issue since it must support efficient coordination, conflict resolution, and resource sharing across functional lines, affecting the components of organizational design. NPD process models, more generally, promote work across functions and projects by offering a common structure and guide to improve communication (Bansal & Sharma, 2022). Centralized decision-making has a tendency to stifle creativity while brainstorming and experimenting are known to foster invention. Phases include those that are explicitly planned, include senior-level participation, prepare feasibility studies, solicit consumer input, and integrate cross-functionally (Tarigan, Sebayang, & Basana, 2021). These techniques adhere to the NPD organization process to manage risk and boost efficiency.

Six articles emphasize the important role of consumer requirements, the creation of a product concept, the creation of a comprehensive design, testing, and commercialization of the product are some of the important stages that make up the new product development process (Youssef & Webster, 2022; Prasetyo et al., 2020a; Prasetyo, 2019; Bansal & Sharma, 2022; Agustia et al., 2022; Bratianu et al., 2022). For competitive companies to survive in the industrial sector and improve the quality of regional economic growth companies' competitiveness, it has to rely heavily on innovation in developing new products to maintain consumers. One of the articles emphasizes the need for strong product standards and productivity in industrial products, the findings indicate a reasonably significant and favorable association between productivity and industrial competitiveness, in which developing new products is the biggest contributor of productivity to total correlation and

influence to enhance industrial competitiveness (Prasetyo, 2019). Only one study uses analytical method path analysis in the form of a dual path correlation model (Prasetyo et al., 2020b), and the others use the paper's quantitative descriptive investigation.

The application of computer technology in the industrial design sector of new goods and innovations will also bring significant progress for our nation in the development of industry, as computer technology is developing extremely quickly and all kinds of technology are continually appearing and can transform the industry into a brand-new sector in our nation. Computer technology can also assist the industry in continuing to design, significantly raising the level at which it operates. Industrial design can also constantly improve design technology, spur business creativity, raise awareness of innovation, encourage innovation to boost industry competitiveness and national competitiveness, and significantly enhance the industrial design of new products (Wang, 2021).

As mentioned in the study by Chang & Zhang (2019), businesses are motivated to create green products that use sustainable innovation or resources as consumers' concerns about environmental sustainability grow. This study adds to the body of literature by focusing on how consumers respond to a company's introduction of a green product based on two variables: the degree to which the new green product shares characteristics with the existing product offerings and the degree to which customers are resistant to innovation. According to the findings, businesses should take into account both customer resistance to innovations and product consistency between new green products and existing product offers when introducing them to the market.

These articles involved a literature search on the relationship between new product development and industrial competitiveness, all of which have a positive relationship between new product development and industrial competitiveness in the industrial sector. Some articles showed that in Polish low and high-technology systems, new product and process innovation patterns will be identified and compared. The main premise is that the innovation patterns of low, medium, and high technology and low, medium, and high technology systems diverge and converge over time and are significantly influenced by firm characteristics, their relationships to other system participants, the level of demand, and institutional conditions. The research's focus is at least on new enterprises' products and innovation processes. The findings demonstrate that although the high-technology system has a higher level of product and process innovation, businesses in the low, medium, and low-technology sectors are better supported by business support groups and general finance instruments (Dzikowski, 2022).

The most important finding in the previous literature review shows that a Multi-Criteria Decision-Making approach may be successfully used to enhance the new product development process in an actual industrial setting. The most important role in affecting the development of new products is company culture, management effectively, a variety of critical and also company strategies, and employee skills (Tarigan et al., 2021).

The study of Agustia et al. (2022) attempts to demonstrate how firms that develop novel products might enhance the productivity of businesses in Indonesia. Moreover, businesses with advanced technology capabilities might lessen the effect of how firms develop novel products on the effectiveness of businesses in Indonesia. The findings indicated that how firms that develop novel products had a considerable impact on the company's performance, whereas Techcap had no such impact. The effect of how firms that develop novel products on the performance company can then be lessened by Techcap. To build a long-term and sustainable firm orientation and high industry competitiveness, companies with strong technological skills have been matched with good research and development efforts, contrary to other research, there was no sign of danger from new competitors, and the



performance of the firms was unaffected by the bargaining power of the customers. Strategic performance, not financial performance, is significantly influenced by the supplier's bargaining strength. The threat of replacement products also affects financial performance rather than strategic performance. Strategic and financial performance considerably benefited from the enterprises' intense competition with one another (Bansal & Sharma, 2022).

Developing new product represent a significant source of competitiveness and one of the most important aspects of advancement and competition in every country and is crucial for economic growth and serves as a source of social welfare development in any country.

According to the study by, the high levels of product globalization have directly led to record levels of competition being attained in several industries, most notably the automotive sector. As a result, businesses are continuously searching for novel strategies to outdo their rivals in the marketplace. The continuous long-term success of every business depends on producing things that consumers value highly. One can reduce a range of non-value-added expenses by being aware of the numerous aspects that go into these prices. Effectively utilizing job analysis tactics is crucial when it comes to raising a product's value. Value engineering is a systematic, function-based approach that does not in any way compromise the quality or dependability of the final product. Its main objective is to find and cut out wasteful spending. Using this approach encourages innovative thinking, new business ventures, and long-term financial success. Companies from a variety of industries may gain major competitive advantages while developing new goods by using this strategic tool early on.

## Conclusions

Developing new products and displaying innovation in these products is crucial for any company functioning in the industrial sector to achieve sustainable economic growth. Strategic thinking is required for each representative to keep up their company, compete in the industrial sector, and retain their competitive position against rivals because competitiveness is at the heart of a company's success or failure in the sector. By providing the most cutting-edge items and catering to customers who are always changing and evolving. The company always works to comprehend market demands and stay in close contact with suppliers; it is not only using resources to get a significant advantage but also innovates to build a sustainable competitive advantage that necessitates collaboration in the industrial market.

Improving competitiveness and long-term success requires the capacity to establish and maintain collaborative connections with suppliers, distributors, and customers. Collaboration with suppliers is necessary for a company to understand customer wants and their technological requirements through developing new products and to survive the industrial competition.

The development and long-term viability of industrial companies and destinations depend on the invention of new products. Constant innovation takes place to boost the industry's competitiveness, notably the industrial experience with new inventive product offers. Three categories of innovation practices were found in the project: innovative technology, innovative support tools, and innovative new products offered to increase competitiveness in the industrial markets.

One of the most important recommendations of the study is to emphasize the importance of focusing on attracting consumers by developing new industrial products, improving the quality of these industrial products, and focusing on industrial competition in the market to increase their profits and maximize their market shares. As well as through the

involvement of effective management and interest in setting the strategy for the company and interest in research and development for new products, as well as preserving the intellectual property rights of the products before they go down on the market, such as protecting its industrial model and protecting its trademark. There exist many models and theories on industrial competitiveness and the new development of industrial products, but integrated frameworks that can help practitioners to take key decisions on industrial competitiveness are few.

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