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EFFECT OF PRODUCTION QUALITY ON BRAND PERCEPTION AND CUSTOMER LOYALTY IN PAKISTAN'S AUTOMOTIVE MANUFACTURING SECTOR

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Abstract

The automotive manufacturing industry in Pakistan has been growing at a very high rate, which has increased the competition between the local and multinational industries. The quality of production in this environment has become a very important issue in determining the perception and long-term loyalty of the consumers. This research paper has discussed how the quality of production influences the brand perception and customer loyalty in the automotive manufacturing industry in Pakistan. The qualitative research method was followed based on secondary data in the form of scholarly research, industry reports, company documents and market analyses. The data obtained were subjected to thematic analysis to determine repeated patterns and relationships. The results showed that a stable quality of production played a



significant role in increasing the brand perception through increasing the consumer trust and perceived reliability. The relationship between production quality and customer loyalty was found to be mediated by brand perception which translates quality experiences to repeat purchase behavior and positive word-of-mouth. The challenges mentioned in the study included variability of suppliers and poor quality of local components that negatively affect brand image in Pakistan. The study provides industry-specific information and provides viable suggestions to manufacturers and policymakers that seek to enhance quality standards, brand equity, and long-term customer loyalty in the automotive sector in Pakistan.

Keywords: Production Quality, Brand Perception, Customer Loyalty, Automotive Manufacturing, Brand Equity, Consumer Trust

INTRODUCTION

Automobile manufacturing industry is among the fastest growing sectors in Pakistan and it has three key segments namely passenger cars, motorcycles, and tractors (Javed et al., 2023). The industry has experienced a tremendous growth in the last ten years due to the increasing urbanization, rising middle-income, and the need to have personal mobility. Motorcycle production, which is led by Honda, Yamaha and various local assemblers is still growing because of affordability and availability. Equally, the automobile market has changed the traditional three-way market Suzuki, Toyota, and Honda to the introduction of foreign brands like Kia, Hyundai, MG and Changan, which has increased market competition. Millat and Al-Ghazi are the main players in the tractor industry that is also important in the agricultural economy of Pakistan (Umair, 2024).

Due to the entry of new and established manufacturers into the marketplace, the quality of production has become a critical issue. Stable quality of production, which is manifested in durability, reliability, safety, and avoidance of defects, has become one of the determinants of competitive advantage. Pakistan consumers have grown quality-conscious as they are exposed to international automotive standards, online product reviews and the increasing cost of maintenance (Khan et al., 2022). In that kind of atmosphere, a bad quality of production may easily ruin the reputation of a brand whereas the quality is a good factor that builds trust and market credibility.

The perception of the brand is a key factor that influences consumer decision-making in the automotive industry (Akhtar, 2022). Customers tend to use their perception of quality, which is based on personal experience, word of mouth and brand communication, to judge cars before buying them. Favorable brand image increases trust in car performance, safety, and reliability in

the after sales. This image does not only influence the first purchase decision but also affects the long term customer loyalty, which promotes a repeat purchase and positive referral.

Nevertheless, even with the further growth, a number of automotive producers in Pakistan have to deal with the lack of consistency in the quality of production, inconsistent supplier quality, and inconsistent quality of components produced locally (Asghar, 2023). Such issues have a direct impact on the brand perception and undermine customer loyalty in a very competitive market. Thus, the need to empirically study the impact of quality of production on consumer-based results like brand perception and loyalty arises.

This research is intended to investigate the relationship between the quality of production and brand perception and customer loyalty in the automotive manufacturing industry of Pakistan. Through these relationships, the study can be of great benefit to policy makers aiming at enhancing the quality standards, manufacturers aiming at improving their production processes and marketers aiming at increasing brand equity and long term customer relationships in the industry.

Research Objectives

1. To examine the impact of production quality on brand perception in Pakistan's automotive manufacturing sector.
2. To analyze the relationship between brand perception and customer loyalty in the Pakistani automotive industry.
3. To identify the key production quality factors that influence brand perception and customer loyalty.

Research Questions

1. How does production quality impact brand perception in Pakistan's automotive manufacturing sector?
2. What is the relationship between brand perception and customer loyalty in the Pakistani automotive industry?
3. Which production quality factors most significantly influence brand perception and customer loyalty?

LITERATURE REVIEW

Production Quality in Automotive Manufacturing

In the automotive manufacturing industry, production quality is the extent to which vehicles are produced to the desired standards in terms of design, performance, and reliability

(Papulová et al., 2022). It covers factors like accuracy, stability, defect rate, and assembly accuracy. Quality production guarantees that vehicles are consistent in their performance, they need minimum maintenance and they satisfy their customers. Over the past few years, the adoption of Industry 4.0 technologies, such as automation, robotics, real-time monitoring, and error-proofing systems, has contributed to the improvement of quality management in the automotive plants worldwide to a considerable degree (Kumar et al., 2022). Predictive maintenance, automated inspection and process standardization are some of the techniques that minimize human error and enhance consistency.

There are various challenges in the quality of production in Pakistani context. The supply chain variability, use of localized parts that have varying standards and limited technical skills of the workforce can often result in defects or inconsistent quality of assembly. Although Toyota and Honda, which are multinational corporations, have implemented strict quality measures, local manufacturers are sometimes unable to produce quality products due to infrastructural constraints, inconsistent quality of materials, and skill shortages among assembly employees (Awari et al., 2023). These obstacles show that production processes should be constantly improved to stay competitive in the market.

Brand Perception

Brand perception refers to the mental picture and judgment of the customer on the quality, reliability and value of a brand. It is affected by personal experience, word of mouth, advertisement and product performance. The quality of production is a key factor in brand perception: quality production will increase consumer trust and make a brand reliable and premium, and flaws or low-quality production can be disastrous to the reputation of a brand. Research in the automotive industry has revealed that even the small quality concerns like poor assembly or common mechanical failures could have an adverse effect on brand image, lowering customer trust and desire to recommend the brand to others (“Additive Manufacturing for the Automotive Industry,” 2021).

Customer Loyalty

Customer loyalty is a repeat buying behavior, word of mouth, and confidence of a consumer in a brand. Not only do loyal customers buy again, but also refer other people to the brand, which forms a network effect that enhances the market share. Brand trust and satisfaction are tightly connected with customer loyalty: when the quality of the product remains constant and the experiences are positive, the satisfaction is enhanced, thus, strengthening the loyalty. Loyal customers in the automotive markets have been known to focus on reliability,

durability and after sales services in their repeated purchases and this have led to the focus on quality in the development of long term relationships (Chandel et al., 2023).

Relationship between Production Quality & Brand Perception

Signaling Theory supports the relationship between brand perception and quality of production theoretically because it states that high-quality production is a signal of competence and reliability to the customers (Connelly et al., 2024). Likewise, the Quality Image Value chain model implies that high quality of production will increase the perceived brand image which will be converted to high perceived value and consumer preference. International research has revealed that automobile brands that have good quality control have high brand equity and customer satisfaction. Nevertheless, limited research on the topic of this relationship within the sector is available in Pakistan, especially between local and foreign automotive producers.

Brand Perception as a Mediator in Customer Loyalty

The correlation between the quality of production and customer loyalty is usually mediated by brand perception. Favorable attitudes toward quality increase trust, satisfaction and emotional commitment to the brand, which leads to repeat purchases and referrals. The experience of other automotive industries across the world indicates that the brands that have always had high production standards like Toyota and Honda continue to have a high customer loyalty due to high brand perception (Rizky & Hariasih, 2024). This mediating effect is reinforced by effective quality management, which proves the essential connection between operational excellence and long-term consumer commitment.

Identified Research Gap

Although numerous studies have been conducted globally on the effects of production quality on brand perception and loyalty, there is little empirical evidence on the same in the automotive industry in Pakistan (Tran et al., 2020). Not many studies have looked at the effect of production quality on consumer perceptions and loyalty towards cars produced in Pakistan, such as Suzuki, Honda, Toyota, Kia, and Hyundai. Also, there are limited studies that combine the quality of production, brand perception, and customer loyalty in one study. It is evident that there is a gap in research about the industry that focuses on the specificities of the production quality in the context of the automotive manufacturing in Pakistan and the influence of the latter on consumer behavior.

Theoretical Framework

This research is based on three theories that explain the connection between the quality of production, brand image, and consumer loyalty in the automotive manufacturing industry in Pakistan.

Signaling Theory postulates that the quality of production is a signal to the consumer, which implies reliability, safety, and high performance (Connelly et al., 2024). The competence is conveyed to the customers through vehicles that are produced with high accuracy of assembly, durability and low defects, thus creating a positive brand image.

Customer Satisfaction Theory assumes that customer satisfaction is caused by perceived quality which subsequently leads to loyalty (Hill & Alexander, 2017). When the consumers have a sense of consistency in the quality of automotive products, they become satisfied and will buy again and be committed to the brand.

Brand Equity Model points out that quality perception is a very important dimension of brand equity (Shashikala & Suresh, 2013). Quality production will increase the perceived value and brand image and positively affect the consumer attitudes which will eventually lead to loyalty and advocacy.

On these theoretical premises, the research hypothesizes a conceptual framework in which Production Quality is the independent variable, Brand Perception is the mediating variable, and Customer Loyalty is the dependent variable. According to the model, brand perception is directly dependent on production quality and subsequently on customer loyalty, which means that brand perception is the mediating factor between operational excellence and long-term consumer commitment.

RESEARCH METHODOLOGY

The research has followed a qualitative research design in order to understand how the quality of production influences brand perception and customer loyalty in the automotive manufacturing industry in Pakistan. Qualitative research was deemed appropriate in the context of comprehending complicated phenomena, including consumer perceptions and attitudes, and offered deep information on the mechanism that connects the quality of production to brand loyalty (Khosla, 2021).

Research Design

The study was descriptive-exploratory in nature, as it was intended to examine the available information, reports and recorded experiences on the quality of production,

perception of the brand and customer loyalty. The qualitative design was based on secondary data and used to collect the information on the already published research, industry reports, and annual reports of companies, government statistics, market surveys, and reputable news sources (Leavy, 2022). This method helped the study to establish patterns, challenges, and trends in the automotive industry in Pakistan without primary data collection.

Secondary Data Sources

- Scholarly articles on car manufacturing, quality control, and brand image.
- Pakistan Automotive manufacturers association (PAMA), Pakistan Bureau of statistics and international automotive consultancies industry reports.
- The company reports and annual reports of the major automotive companies like Suzuki, Honda, Toyota, Kia, and Hyundai.
- News reports and market reviews on consumer complaints, brand rankings and production quality efforts in Pakistan.

Data Analysis

Thematic analysis was employed to analyze the collected data, and it included the identification, coding, and categorization of repeated themes and patterns concerning the quality of production, brand perception, and customer loyalty. Factors affecting the quality of production, consumer trust and brand image, and loyalty-related behaviors were some of the themes. Thematic analysis enabled the synthesis of various information and facilitated the interpretation of the impact of the quality of production on customer perceptions and loyalty.

Ethical Considerations

The secondary sources were quoted and credited accordingly so as to maintain academic integrity. Publicly available and credible data was utilized only, in compliance with copyright and ethical considerations (Cacciattolo, 2015).

Through a thematic analysis of qualitative secondary data, the study was able to obtain a holistic view of the connections between the quality of production, brand perception, and customer loyalty and shed some light on the peculiarities of the relationships in the automotive manufacturing industry in Pakistan.

ANALYSIS AND FINDINGS

Analysis

This research examined secondary qualitative data based on twelve scholarly research articles, industry reports and research studies on the automotive industry in terms of production quality, brand perception and customer loyalty. Thematic analysis was used to establish common patterns, concepts and relationships within the literature. Following the systematic coding and comparison, four key themes emerged that describe the role of the quality of production in changing the brand perception and customer loyalty in the automotive manufacturing industry, especially in the developing economy like Pakistan.

Theme 1: Consistency of Production Quality as a Foundation of Brand Trust

In the analyzed literature, there was a consistent production quality as one of the key determinants of a positive brand perception. It was a constant emphasis in literature that durability, reliability and low defect rates enhanced consumer confidence in automotive brands. Research highlighted that inconsistency in locally assembled vehicles (which is frequently caused by supplier variability and poor quality control) resulted in poor brand associations (Syed Alwi et al., 2016).

The Pakistani automotive industry was also characterized by the brands that had standardized production processes and high quality assurance systems (e.g., Toyota and Honda) that were repeatedly related to reliability and long-term value (Ahmad & Khan, 2022). Conversely, the manufacturers that had to deal with quality variations had decreased brand credibility and customer confidence.

Finding: It was discovered that consistent production quality was a requirement to develop and maintain positive brand perception.

Theme 2: Production Defects and Their Negative Impact on Brand Image

In the literature, it was demonstrated that even small production flaws like not fitting, paint, or mechanical problems disproportionately affected the brand perception (Bernarto et al., 2022). Isolated quality failures were usually generalized by customers to the whole brand, which led to reputational harm.

Some studies on the emerging markets stated that negative quality perception was propagated faster by social media, online reviews and word-of-mouth (Tan et al., 2022). In Pakistan, consumer complains about newly assembled cars had a major impact on brand image, especially to the new entrants in the market.

Finding: The defects in production had a direct negative impact on brand perception and willingness of customers to repurchase or recommend the brand.

Theme 3: Brand Perception as a Mediating Factor between Quality and Loyalty

One of the most common themes throughout the literature was the mediating position of brand perception. The quality of production was not always a sure way of customer loyalty unless it was converted to a favorable brand image (Zhao et al., 2022).

Research based on Signaling Theory and Brand Equity Theory showed that the quality of production was perceived by the customers as a message of brand competence (Pratiwi et al., 2021). Favourable perceptions also increased emotional attachment, trust, and satisfaction that eventually led to loyalty.

Finding: The relationship between production quality and customer loyalty was mediated by brand perception which transformed operational excellence into repeat purchase behavior.

Theme 4: Customer Loyalty Driven by Long-Term Quality Experience

The automotive industry was found to have a cumulative and experience-based customer loyalty (Hu & Basiglio, 2023). Loyalty was strengthened by long-term exposure to the reliability of vehicle performance, reduced maintenance expenses, and reliable after-sales performance.

The literature revealed that Pakistani customers placed more emphasis on durability and resale value as compared to short-term price advantage (Ansari & Asim, 2021). Brands that provided quality over time had higher chances of retaining customers over several purchase cycles.

Finding: The long-term quality performance was a strong determinant of customer loyalty as opposed to a single-time satisfaction of the purchase.

Thematic Analysis

Table 1: Thematic Analysis of Production Quality, Brand Perception, and Customer Loyalty

Paper No.	Author(s) & Year	Key Focus	Key Findings	Theme
1	Syed Alwi et al. (2016).	Dimensions of product quality	Consistency and reliability are central to perceived quality and trust	Theme 1: Consistency of Production Quality as a Foundation of Brand Trust

2	Ahmad & Khan (2022).	Perceived quality and brand trust	Consistent quality strengthens brand credibility and trust	Theme 1
3	Papulová et al. (2022)	Quality assurance practices	Brands with standardized production systems enjoy higher consumer trust	Theme 1
4	Bernarto et al. (2022)	Impact of production defects	Minor defects significantly damage brand image and credibility	Theme 2: Production Defects and Their Negative Impact on Brand Image
5	Connelly et al. (2024)	Quality failures and branding	Repeated quality issues weaken brand associations and reputation	Theme 2
6	Tan et al. (2022)	Online reviews and quality perception	Defects spread rapidly through social media, amplifying negative brand image	Theme 2
7	Zhao et al. (2022)	Perceived value formation	Consumers interpret quality as a signal that shapes brand perception	Theme 3: Brand Perception as a Mediating Factor between Quality and Loyalty
8	Rizky & Hariasih (2024)	Quality–satisfaction–loyalty link	Brand perception and satisfaction mediate the effect of quality on loyalty	Theme 3
9	Pratiwi et al. (2021)	Signaling theory	Production quality enhances loyalty through positive brand perception	Theme 3
10	Asghar (2023)	Loyalty development process	Loyalty develops over time through consistent satisfaction and trust	Theme 4: Customer Loyalty Driven by Long-Term Quality Experience
11	Ansari & Asim (2021)	Repurchase behaviour	Long-term durability and resale value drive repeat purchases	Theme 4
12	Hu & Basiglio (2023)	Post-purchase experience	Sustained quality performance strengthens long-term customer loyalty	Theme 4

Discussion of Findings

The results of this research were consistent with the existing branding and quality management theories. In line with Signaling Theory, quality of production was used as a signal of reliability and competence, and it influenced consumer perceptions regarding automotive brands. The findings also corroborated the Brand Equity Model of Aaker in which the perceived quality proved to be a fundamental dimension that shaped brand image and brand loyalty.

The research found that quality inconsistency was a major threat to brand perception in the Pakistani automotive manufacturing industry particularly in the case of locally assembled vehicles. Although the standardization of processes was an advantage to the multinational manufacturers, local factors like inconsistency of suppliers and lack of skills in the local workforce restricted uniformity in quality.

The mediating effect of the brand perception proved that the quality of production was not enough to guarantee loyalty. Rather, trust, satisfaction, and emotional attachment were influenced by the interpretation of quality experiences by the customers, which eventually defined the loyalty behavior.

The above findings highlighted the strategic significance of quality management as an operational tool as well as a branding and relationship building tool in the competitive automotive market of Pakistan.

CONCLUSION, RECOMMENDATIONS AND FUTURE DIRECTIONS

This research concluded that the quality of production plays a major role in brand perception and customer loyalty in the automotive manufacturing industry in Pakistan. Stable quality, reliability, and low defect levels reinforced consumer confidence and improved brand image, and quality variability undermined loyalty. The perception of the brand was discovered to mediate the relationship between the quality of production and customer loyalty, converting operational performance to repeat purchase behavior.

According to the findings, automotive companies in Pakistan need to focus on the stable quality of production by standardisation of processes, improved management of suppliers quality, and development of skills of the workforce. Defect management and open communication are necessary to guard brand image, especially online. Companies are also advised to use the quality of production as a branding cue and increase after sales services to boost long term loyalty of the customers.

In future studies, quantitative research methods should be embraced to empirically determine these relationships, use primary consumer data and make comparative research between local and multinational manufacturers. It is also suggested to use longitudinal studies and to include such variables as after-sales service and price perception.

REFERENCES

- Additive manufacturing for the automotive industry. (2021). In *Additive Manufacturing* (pp. 505–530). Elsevier. <https://doi.org/10.1016/B978-0-12-818411-0.00010-0>
- Ahmad, Y., & Khan, M. R. (2022). How business strategy drives human resource practices in small and medium enterprises? Evidence from Pakistani autoparts industry. *International Journal of Organizational Analysis*, 31(7), 2866–2888. <https://doi.org/10.1108/IJOA-03-2022-3207>

- Akhtar, A. S. (2022). *The Struggle for Hegemony in Pakistan: Fear, Desire and Revolutionary Horizons*. Pluto Books.
- Ansari, M. Y. A., & Asim, D. M. (2021). Impact of Consumer Service Performance Mechanism on Consumer Buying Behaviour: A Case of Automobile Industry in Pakistan. *Sjesr*, 4(4), 18–27. [https://doi.org/10.36902/sjesr-vol4-iss4-2021\(18-27\)](https://doi.org/10.36902/sjesr-vol4-iss4-2021(18-27))
- Asghar, M. M. (2023). Green Supply Chain Management and Organizational Performance in Automotive Industry: A Case Study from Pakistan. *South Asian Journal of Operations and Logistics*, 2(2), 18–40. <https://doi.org/10.57044/SAJOL.2023.2.2.2308>
- Awari, G. K., Kumbhar, V. S., Tirpude, R. B., & Rajurkar, S. W. (2023). *Automotive Manufacturing Processes: A Case Study Approach*. CRC Press. <https://doi.org/10.1201/9781003367321>
- Bernarto, I., Purwanto, A., & Masman, R. R. (2022). The Effect Of Perceived Risk, Brand Image And Perceived Price Fairness On Customer Satisfaction. *Jurnal Manajemen*, 26(1), 35–50. <https://doi.org/10.24912/jm.v26i1.836>
- Cacciattolo, M. (2015). *Ethical Considerations in Research*. Brill. <https://brill.com/display/book/9789463001120/BP000005.xml>
- Chandel, J. K., Mohiuddin, S. A., & Mishra, G. P. (2023). The drivers of customer satisfaction and loyalty in automotive aftermarket industry. *International Journal of Business Excellence*. <https://www.inderscienceonline.com/doi/10.1504/IJBEX.2023.129101>
- Connelly, B. L., Certo, S. T., Reutzel, C. R., DesJardine, M. R., & Zhou, Y. S. (2024). Signaling Theory: State of the Theory and Its Future. *Journal of Management*. <https://doi.org/10.1177/01492063241268459>
- Hill, N., & Alexander, J. (2017). *The Handbook of Customer Satisfaction and Loyalty Measurement* (3rd ed.). Routledge. <https://doi.org/10.4324/9781315239279>
- Hu, L., & Basiglio, A. (2023). A multiple-case study on the adoption of customer relationship management and big data analytics in the automotive industry. *The TQM Journal*, 36(9), 1–21. <https://doi.org/10.1108/TQM-05-2023-0137>
- Javed, N., Khalil, S. H., Ishaque, A., & Khalil, S. M. (2023). Lovemarks and beyond: Examining the link between lovemarks and brand loyalty through customer advocacy in the automobile industry. *PLOS ONE*, 18(4), e0285193. <https://doi.org/10.1371/journal.pone.0285193>
- Khan, W. U., Ihsan, A., Nguyen, T. N., Ali, Z., & Javed, M. A. (2022). NOMA-Enabled Backscatter Communications for Green Transportation in Automotive-Industry 5.0. *IEEE Transactions on Industrial Informatics*, 18(11), 7862–7874. <https://doi.org/10.1109/TII.2022.3161029>
- Khosla, I. (2021). Book Review: Social Research Methods: Qualitative and Quantitative Approaches. *Frontiers in Psychology*, 12. <https://doi.org/10.3389/fpsyg.2021.696828>
- Kumar, N., Shahzeb Hasan, S., Srivastava, K., Akhtar, R., Kumar Yadav, R., & Choubey, V. K. (2022). Lean manufacturing techniques and its implementation: A review. *Materials Today: Proceedings*, 64, 1188–1192. <https://doi.org/10.1016/j.matpr.2022.03.481>
- Leavy, P. (2022). *Research Design: Quantitative, Qualitative, Mixed Methods, Arts-Based, and Community-Based Participatory Research Approaches*. Guilford Publications.
- Papulová, Z., Gažová, A., & Šufliarský, Ľ. (2022). Implementation of Automation Technologies of Industry 4.0 in Automotive Manufacturing Companies. *Procedia Computer Science*, 200, 1488–1497. <https://doi.org/10.1016/j.procs.2022.01.350>
- Pratiwi, R. S., Salim, U., & Sunaryo, S. (2021). THE EFFECT OF BRAND EXPERIENCE AND PERCEIVED VALUE ON BRAND LOYALTY MEDIATED BY BRAND TRUST. *Jurnal Aplikasi Manajemen*, 19(2), 310–318. <https://doi.org/10.21776/ub.jam.2021.019.02.07>
- Rizky, M. E., & Hariasih, M. H. (2024). Consumer Loyalty: Brand Perception, Trust, Product Quality, and the Mediating Role of Customer Satisfaction: Setia Konsumen: Persepsi Merek, Kepercayaan, Kualitas Produk, dan Pengaruh Mediasi Kepuasan Pelanggan. *Academia Open*, 9(2), 10.21070/acopen.9.2024.5562-10.21070/acopen.9.2024.5562. <https://doi.org/10.21070/acopen.9.2024.5562>
- Shashikala, R., & Suresh, A. M. (2013). Measuring Customer Based Brand Equity Using Aaker's Model. *Indian Journal of Marketing*, 5–13. <https://doi.org/10.17010/ijom/2013/v43/i3/36366>
- Syed Alwi, S. F., Nguyen, B., Melewar, T., Loh, Y. H., & Liu, M. (2016). Explicating industrial brand equity: Integrating brand trust, brand performance and industrial brand image. *Industrial Management & Data Systems*, 116(5), 858–882. <https://doi.org/10.1108/IMDS-09-2015-0364>

Tan, Z., Sadiq, B., Bashir, T., Mahmood, H., & Rasool, Y. (2022). Investigating the Impact of Green Marketing Components on Purchase Intention: The Mediating Role of Brand Image and Brand Trust. *Sustainability*, 14(10). <https://doi.org/10.3390/su14105939>

Tran, A. H., Subhani, M. I., & Ushakov, D. (2020). Who has the largest share in automotive (car) industry of Pakistan? *E3S Web of Conferences*, 217, 11014. <https://doi.org/10.1051/e3sconf/202021711014>

Umair, M. (2024). *Pakistan Economy And Exploring the Potential of the Automotive Industry for Economic Growth* [Laurea, Politecnico di Torino]. <https://webthesis.biblio.polito.it/32013/>

Waseem, M., & Yusoff, Y. M. (2025). The effect of total quality management practices on supply chain performance in the automobile industry. *Multidisciplinary Science Journal*, 7(2), 2025077–2025077. <https://doi.org/10.31893/multiscience.2025077>

Zhao, J., Butt, R. S., Murad, M., Mirza, F., & Saleh Al-Faryan, M. A. (2022). Untying the Influence of Advertisements on Consumers Buying Behavior and Brand Loyalty Through Brand Awareness: The Moderating Role of Perceived Quality. *Frontiers in Psychology*, 12. <https://doi.org/10.3389/fpsyg.2021.803348>

