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Exploring Information Asymmetry and Fair-Trade Mechanisms for Sustainability in Taiwan's Used Car Market

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Abstract: This study examined information asymmetry comprising adverse selection and moral hazard and the role of fair-trade mechanisms in promoting sustainability in Taiwan's used car market. Using a qualitative document analysis of literature, reports, and statistical data, the research found that adverse selection prevented buyers from distinguishing between high- and low-quality vehicles, driving higher-quality cars out of the market. Consequently, moral hazard intensified as sellers concealed defects for profit. However, enhanced information technology and greater market transparency helped mitigate asymmetry by enabling buyers to better assess product quality and strengthening regulatory oversight. The findings underscored key policy implications for market governance, fair-trade regulation, and sustainability accounting. Improved information disclosure and accountability enhanced consumer protection, reduced unethical behavior, and supported market efficiency and stability. As adverse selection and moral hazard diminished, the market evolved toward fairness and sustainability. Overall, the study connected information asymmetry with fair-trade policy, offering insights for regulators to strengthen disclosure standards and market transparency. It also emphasized the importance of sustainability accounting in reinforcing consumer trust, accountability, and long-term market resilience, providing valuable guidance for policymakers in designing balanced and transparent governance frameworks.

Keywords: Adverse selection, fair trade, information asymmetry, moral hazard, sustainability, Taiwan's used car market.

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INTRODUCTION

The COVID-19 pandemic broke out in 2019 and gradually alleviated by 2023. During this period, the global economy and supply chains were seriously damaged. Due to the lockdowns and restrictions implemented, logistics and transportation were constrained, creating production bottlenecks and lowering global production capacity. Subsequently, the war between Russia and Ukraine erupted, causing semiconductor shortages that postponed production and deliveries. Because new vehicle supply chains were limited, consumers gradually turned to buying used cars, which drove both demand and prices upward.

These changes demonstrated that the prices of used cars were affected both by market mechanisms and external shocks, as well as by information asymmetry, since sellers typically possessed much more

information about the cars than buyers. This imbalance between sellers and buyers led to negative outcomes, including market inefficiency, erosion of trust, and unfair trades. Given the unpredictability of shocks such as epidemics or wars, and the limited short-term relief often provided by policies, it was necessary to analyze information asymmetry, especially in Taiwan's used car market.

Furthermore, principles such as fair trade, transparency, fairness, and trust were closely integrated. For example, certification was introduced as a tool to bridge the information gap between producers and consumers, providing a mechanism to present the history and quality of used cars in the market. All these efforts aimed to improve information asymmetry effectively. Simultaneously, the fair-trade framework was constructed to address efficiency problems arising from information asymmetry, including adverse selection and moral hazard.

Hence, it was true that information asymmetry, derived from adverse selection and moral hazard, might have damaged governance and sustainable decision-making. Without reliable information, more attention was paid to short-term gains, while economic, social, and environmental objectives were set aside. To address these gaps, the study made use of transparent reporting, fair trade practices, and robust governance, and further combined accounting and management measures with long-term value to enhance authorities' accountability and align actions with sustainability goals.

Adverse Selection

The adverse selection existed in various markets and usually occurred before the transaction was completed, particularly when buyers lacked sufficient information to verify the quality of used cars. To mitigate the risks associated with adverse selection, buyers often bid at lower prices, which enabled sellers of high-quality vehicles to withdraw from the market. This process ultimately led to a market dominated by low-quality vehicles. As Akerlof (1970) popularly described, this phenomenon is known as the "market of lemons."

In fact, adverse selection has been central to empirical research on the used cars market. For instance, Genesove (1993) proposed that sellers tend to keep their high-quality vehicles if the information is not efficient for buyers. Likewise, Emons and Sheldon (2002) highlighted the "lemon problem" in European markets. Hendel and Lizzeri (1999) and Hendel and Lizzeri (2002) researched durable goods and rental markets associated with adverse selection, while Lin (2022) shed light on mileage as a key signal impacting the resale of used cars. Some other research was related to online markets. Lewis (2011) revealed that warranties, reputation, and information disclosure had a positive effect on improving information asymmetry in auctions.

Moreover, Larsen (2021) claimed that wholesale auctions could increase the average vehicle quality. Tadelis and Zettelmeyer (2011) emphasized that mechanisms of information disclosure could link early warnings of vehicles more effectively and promptly. van Den Bijgaart and Cerruti (2024) argued that risk predictions could be achieved through recall announcements, thereby reducing the negative impact of adverse selection. Additionally, some other conclusions were drawn by related research. For example, Peterson and Schneider (2014) linked used car purchases with risks for basic repairs. Porter and Sattler (1999) verified that the second-hand car market was dominated by low-quality vehicles. Sharma and Mitra (2024) further demonstrated that private information might distort transaction outcomes and lead to an expanded Akerlof's theoretical framework.

In sum, these studies concluded that the inefficiency in the used car market was caused by adverse selection and argued that its impacts could be improved partially by reputation systems, certification, and institutional innovations.

Moral Hazard

Different from adverse selection, moral hazard emerged after a transaction was completed, particularly when misaligned incentives were created by hidden practices. For instance, defects might be concealed by sellers, and the contracts provided might be incomplete, while the vehicle might be misused or opportunistic claims made by buyers after the transaction. In other words, both sellers and buyers might behave in ways that erode trust, increase costs, and reduce market efficiency.

Take insurance and automobile markets as examples to illustrate moral hazard. Boyer and Dionne (1989) and Weiss, Regan, and Tennyson (2007) argued that the experience grading could be designed to lower the opportunistic claims, while Cummins, Phillips, and Weiss (2001) asserted that the fraud might be inhibited by the deductibles. Simultaneously, Schneider (2010) suggested that lessees might be engaged in the behavior with higher risks, while Richaudeau (1999) demonstrated that the accident rates were highly related to the contract design, and Kim (2023) proposed that the drivers' incentives could be formed by regulatory reforms. Apparently, it is difficult to distinguish between moral hazard and adverse selection (Dionne, Michaud, & Dahchour, 2013).

Furthermore, econometrics has also advanced to provide more insights into moral hazard. For instance, Abbring, Heckman, Chiappori, and Pinquet (2003) promoted a dynamic scheme to test the moral hazard; Chiappori and Salanie (2000) and Chiappori, Jullien, Salanié, and Salanie (2006) claimed that both moral hazard and adverse selection existed at the same time; Cohen and Einav (2007) revealed that the risk preferences could be strengthened by the deductible choices; and Einav, Finkelstein, and Levin (2010) suggested strongly that the range of the research model should be enlarged. Accordingly, Finkelstein and Poterba (2014) exploded the annuity market and found some variables hard to observe, while Dionne and Rothschild (2014) revealed that the risk classification bans would influence the behavior.

In addition, some research has expanded its scope to the areas of technology and governance. Schalck (2025) showed that the fraud never stopped in the US auto insurance; Sun, Zhao, and Ran (2024) found that the driving behavior might be affected by insurance contracts in China.; and Liu, Zhang, He, and Li (2021) examined the supply chains which were enabled by block chain and underlined a problem derived from the misleading strategy. Given that both transparency and governance held equal importance, Annan (2025) asserted that the misconduct could be removed due to the information disclosure; Fehr, Klein, and Schmidt (2004) argued for designing the contracts with compatible incentives; and Ribeiro-Duthie, Gale, and Murphy-Gregory (2021) and Barbaroux (2014) focused on constructing models for the emerging governance.

Summarily, the challenge was increased by the moral hazard, which was strengthened by adverse selection, resulting in additional efficiency losses and requiring strong institutional practices.

Fair Trade

The research on fair trade often offered ideas for solving various problems, particularly through transparency and certification mechanisms. In fact, fair trade was once a niche concept, but it has now been globally institutionalized and has paid more attention to fair pricing, equitable relationships, and producer empowerment (Raynolds, 2021; Śliwińska, 2023). Some empirical evidence also verifies the benefits of fair trade. For instance, Fairtrade International reported its positive economic, social, and environmental impacts; Lozano Paredes et al. (2025) asserted its contribution to producer income stability; Kangile et al. (2021) revealed that the coffee farmers in Tanzania could gain significant returns if they had fair trade certification; and Sirdey and Lemeilleur (2019) emphasized the effects of fair trade on improvements in food security and income stability.

Furthermore, the concerns of fair trade had also been derived from commercialization. Some critics warned of the possibility for intermediaries to exploit the reputational gains (De Janvry, McIntosh, & Sadoulet, 2015), the dilution of authenticity (Griffiths, 2012), and the monopolization of value by large corporations. Similarly, some research also argued that the reputation and certification mechanisms could help maintain consumer trust (Li & Kallas, 2021). Recently, some research has broadened their attention to gender and systemic transformation. Accordingly, Raynolds also proposed that the working conditions for women in Ecuador could be improved if they remained with the fair-trade plantations, while Doherty (2018) emphasized Divine Chocolate's partnership with Kuapa Kokoo and proposed an equal model for gender.

Consequently, these findings showed that fair-trade emphasizes transparency, certification, and empowerment, which could offer valuable insights, decrease information asymmetry, and reconstruct confidence, particularly in the used car market.

Summary and Construction of the Model

In one word, the literature proposed the research model and claimed that the information asymmetry was composed of adverse selection and moral hazard, which might cause the used car market to be inefficient or even more unfair. Nevertheless, incorporating mechanisms combined with warranty, certification, information disclosure, and institutional governance could improve the information asymmetry. In other words, if the ideas of fair trade could be achieved particularly transparency, certification, and trust it was possible to expect mitigation of the inefficiency and greater fairness and sustainability, particularly in Taiwan's used car market.

Briefly, information asymmetry was composed of adverse selection and moral hazard. Through transparency, certification, and improved complaints, fair trade was achieved, and the goal of sustainability was reached, including economic stability, social fairness, and environmental sustainability.

METHODOLOGY

The research method adopted was document analysis, a qualitative research method, to examine the central themes of the study. Simultaneously, it explored and analyzed various textual materials systematically, focusing on the core theory and trends, and aimed to understand the relevant research questions more comprehensively.

To examine and analyze information asymmetry in the used car market, the research adopted a systematic approach to data collection and analysis to ensure that the findings were authentic, reliable, and valid. The data sources included academic literature, journal articles, and public sector data. Furthermore, to ensure relevance and authenticity, the selection criteria for specific data were designed so that the materials selected were closely linked to the research topic and aligned with the research objectives. Specifically, the sources consisted of peer-reviewed academic journal articles and conference papers to ensure academic rigor and credibility. As Bowen (2009) highlighted, document analysis could provide data that were relatively stable and rich. With the context and background offered, qualitative methods proved practical. Correspondingly, O'Leary (2014) emphasized the importance of careful document selection and analysis to maintain research rigor.

Additionally, the research model and analysis went beyond basic theory. Classic research on information asymmetry was integrated to construct the theoretical model, including Akerlof's classic "market for lemons" theory. Correspondingly, recent research was incorporated to determine whether these theories applied in modern contexts. For example, in the sharing economy, Huston and Spencer (2002) stressed that information asymmetry could affect service quality and damage the market reputation of emerging digital platforms. These insights indicated that problems derived from adverse selection and moral hazard existed in both traditional and emerging markets.

Furthermore, this study relied on public sector statistics to verify the research more comprehensively and accurately. The selected data covered the past ten years, presenting recent trends and changes to ensure that the findings were timely and effective. As Prior (2011) illustrated, systematic analysis of such data made it possible to identify patterns and associations that would be difficult to detect using a single source. Hence, by combining academic literature, government statistics, and journal articles, the research method integrated multiple sources and was argued to be the best approach in qualitative research. Similarly, Chanda (2022) highlighted that using various documents strengthened the depth and reliability of findings and conclusions.

According to the literature review, the study constructed the information asymmetry model composed of adverse selection and moral hazard, and they form a vicious cycle among them (see Figure 1). With the deterioration of information asymmetry, the information gaps would worsen and erode market fairness. However, the gaps might be reduced as long as transparency, certification, and complaint mechanisms are strengthened because trust and reliability would be built among all the participants in the market. Through the support of trust and reliability, fair trade and sustainability outcomes would be achieved simultaneously, including economic stability, social fairness, and environmental sustainability.

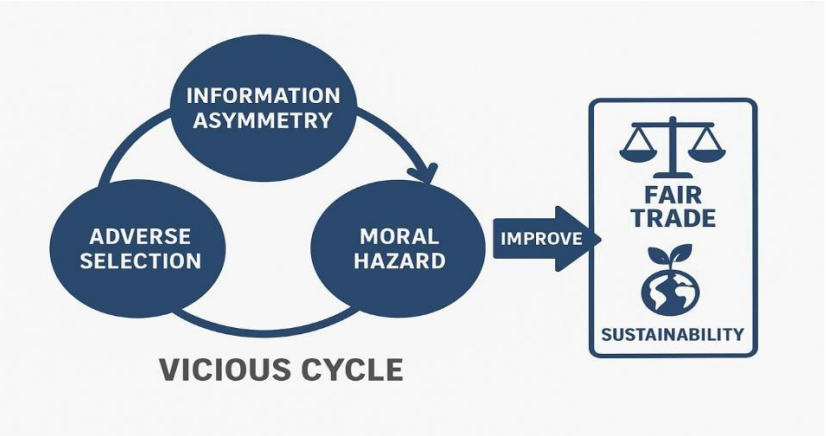

Figure 1: The Model of Information Asymmetry

RESULTS AND DISCUSSIONS

Based on data from the Highway Bureau of the Ministry of Transportation, the number of used cars sold in Taiwan between 2014 and 2024 was nearly double the number of new cars sold (see Table 1 and Figure 2). This trend not only reflected the relative price advantage of used cars but also highlighted consumers' increasing emphasis on resource reuse and economic considerations. Furthermore, the trend confirmed that used cars had gained widespread acceptance among consumers and had played a pivotal role in the automotive market. However, did this trend suggest that Taiwan's used car market was free of information asymmetry and that the market's price mechanism had functioned well? In other words, was there no adverse selection in Taiwan's used car market? This remained an area worth exploring in depth.

Table 1: Statistics on Used and New Vehicle Numbers from 2014 to 2024

Year	Used cars	New cars
2014	848,517	423,831
2015	828,487	420,770
2016	751,963	439,581
2017	759,002	444,624
2018	741,488	435,114
2019	760,425	439,813
2020	780,163	457,411
2021	801,758	449,836
2022	850,898	429,716
2023	902,407	476,956
2024	924,738	457,816

Source: Highway Bureau of Ministry of Transportation

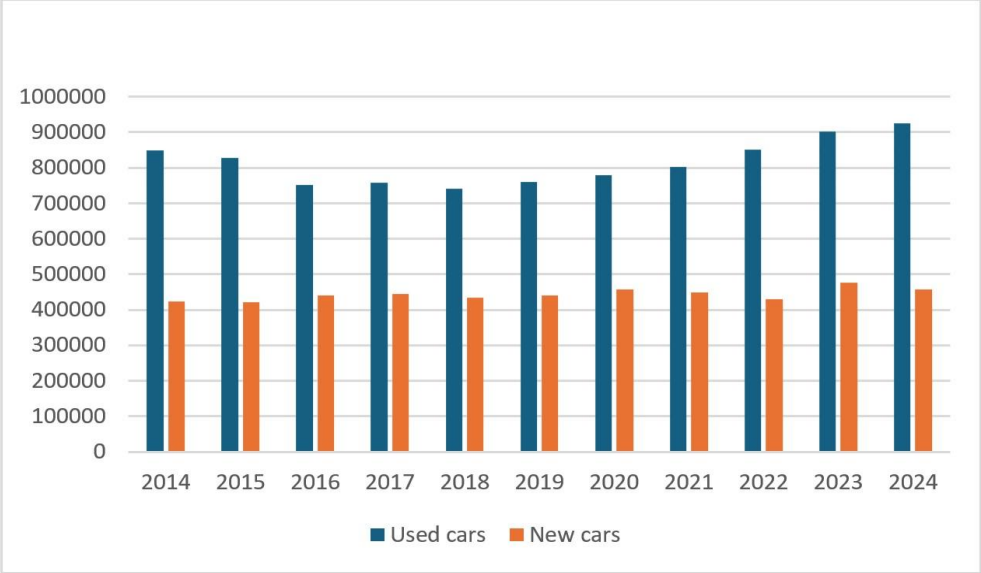

Figure 2 Trends of Used and New Vehicles from 2014 to 2024
Source: Highway Bureau of Ministry of Transportation

Following the previous statement, data from the Consumer Protection Council of the Executive Yuan (see Table 2) indicated that among the consumer dispute cases reported from 2014 to 2024, only in 2015 did vehicle-related disputes rank within the top five, with used car disputes totaling 566 cases. Afterward, disputes related to vehicles including used cars, new cars, and other types gradually decreased and no longer appeared in the top five. Compared with other consumer disputes, used car disputes have shown a significant decline since 2015.

Did this trend confirm that as the transparency of the used car market improved, the risks faced by consumers also decreased? If so, it would have promoted the healthy development of the market while gradually mitigating the moral hazard issue that arose from ex-post information asymmetry. This was an area that, like adverse selection, deserved equal attention and further in-depth research.

The study needed to stress that the information asymmetry model was composed of two critical criteria: adverse selection and moral hazard. Therefore, it was necessary to approach data triangulation across multiple sources and check coding reliability to ensure consistency.

Table 2: Top Five Categories of Consumer Complaints from 2014 to 2022

Year	1	2	3	4	5
2014	Telecommunications	Communications	Tutoring	Online games	Apparel
2015	Communications	Telecommunications	Housings	Tutoring	Vehicles
2016	Tutoring	Communications	Online games	Apparel	Telecommunications
2017	Online games	Apparel	Telecommunications	Communications	Tutoring
2018	Online games	Housing	Telecommunications	Communications	Appliances
2019	Telecommunications	Housing	Online games	Mobile phones	Online shopping
2020	Transportation	Online games	Fitness	Appliances	Apparel
2021	Online games	Fitness	Food	Apparel	Telecommunications
2022	Online games	Transportation	Apparel	Food	Fitness

Source: Consumer Protection Council of the Executive Yuan

Adverse Selection

In the used car market, sellers whether private owners or dealers often possessed more detailed information about a vehicle's history, condition, and maintenance records than buyers. This created a high-risk situation for consumers, who might have ended up with a vehicle in poor condition, while good-quality cars might have been overlooked due to a lack of transparent information. In other words, it was difficult for consumers to make rational decisions because of limited confidence and trust.

Since information asymmetry with adverse selection existed in the used car market, dealers or buyers could not help but reduce purchase prices to avoid or minimize losses. This consequence was rarely suspected before, as information asymmetry and the used car market had always coexisted. Even when dealers replaced or acted as buyers, the situation did not change. To avoid potential losses, they also lowered purchase prices, which crowded high-quality used cars out of the market. What remained filling the market were the poor-quality ones. This situation illustrated Akerlof's "lemon problem" of adverse selection. However, the truth was that the victims affected by adverse selection included not only individual buyers but also used car dealers. Once the losses from adverse selection impacted the parties severely enough, used car transactions decreased dramatically and could even have driven the market out of existence.

Hence, dealers or buyers needed to take effective measures to avoid the losses derived from adverse selection. Correspondingly, third-party certification programs were introduced into the used car market, including the "HOT Good Car Alliance," the "SUM Quality Used Car Alliance," and the "SAVE Certified Car Alliance." These programs performed necessary inspections and provided certifications that ensured vehicle quality met required standards, thereby mitigating adverse selection.

Furthermore, dealers also made use of online platforms to provide effective and sufficient information, including car histories, inspection reports, and maintenance records, which strengthened information transparency. When dealers volunteered to offer such information through online platforms, consumer trust was enhanced, and transaction volumes in the used car market increased simultaneously. This was because consumers could more easily access the needed information and inspect vehicle conditions. All these efforts encouraged consumers to make purchase decisions with full confidence due to the mitigation of adverse selection.

Apparently, the price mechanism alone was not the only reason for Taiwan's used car market to grow much faster than the new car market. Another explanation was that information asymmetry and adverse selection had been improved, allowing the price mechanism to function more efficiently. All these interpretations revealed that Taiwan's used car market had grown faster than the new car market consistently for decades. The results verified the first objective of the study: adverse selection was not so severe in Taiwan's used car market due to increasing transparency, which allowed the price mechanism to function properly and ensured that sales of used cars at lower prices were always much higher than those of new cars at higher prices.

It was evident that certification schemes and online platforms improved adverse selection and enhanced consumer confidence, which encouraged high-quality cars to remain in circulation in the market. In this way, resources were protected from waste by sustaining qualified cars and extending their lifecycle. By enabling resources to be used more efficiently, these measures made significant contributions to economic resilience and environmental sustainability.

Moral Hazard

The moral hazard typically exists in vehicle sales and after-sales service when dealers provide incomplete or false information or when consumers drive and use their cars improperly. These behaviors make transactions difficult to complete, increase market instability, damage both parties in the market, tarnish trust, and negatively impact the transaction environment. The interpretation is described as follows.

Firstly, it needed to be stressed that the moral hazard was aggravated when adverse selection existed in the market. Specifically, if the information provided by dealers was incorrect or false, consumers made wrong decisions when judging the quality of used cars and suffered losses. At the same time, if consumers behaved unreasonably or over-relied on the sales contract, the result further worsened trust, losses, and

damages. If the problems derived from moral hazard were not solved, the trust between both parties deteriorated further, and the possibility of transactions and market growth became much lower. Therefore, it was necessary to build up a transparent scheme for improving moral hazard. This was why the Standardized Contract for Used Car Sales was passed in 2011, which illustrated the rights and obligations of both parties, buyers and dealers. With the help of the standardized contract, transactions were completed on the basis of specific regulations. In fact, the contract not only required dealers to provide honest and reliable information and high-quality after-sales service, but also required consumers to behave reasonably, particularly after sales. All these efforts made significant contributions to reducing moral hazard caused by the adverse selection of information asymmetry. It could be seen that the benefits for both parties were broadened by the improved moral hazard. Without moral hazard, consumers had full confidence in participating in transactions, which allowed dealers to gain more from a healthy and stable market. As described, when the market was equipped with transparent regulations and legal protections, it developed in a fairer and more trustworthy direction.

Specifically, vehicle-related disputes had not ranked among the top five consumer complaints since 2014, appearing only in fifth place in 2015. This proved that the standardized contract scheme made information more transparent and helped both parties construct a platform of mutual trust, which demonstrated that moral hazard was reduced in Taiwan's used car market. Hence, the results verified the second objective of the study: with the help of various schemes, improved transparency lowered adverse selection and moral hazard, which pushed vehicle-related disputes out of the top five complaint categories and validated that moral hazard in Taiwan's used car market had been significantly reduced.

Finally, the standardized contract with transparent after-sales service effectively reduced disputes and waste, which encouraged both parties to behave responsibly and trustworthily. These changes made large and significant contributions to developing social, economic, and environmental sustainability.

Fair Trade

Through various kinds of discussions and efforts, the study showed that the information asymmetry composed of adverse selection and moral hazard did not exist apparently in Taiwan's used car market. That is, the price mechanism functioned effectively. When the price mechanism worked, it was verified that fair trade existed in Taiwan's used car market. The result also validated the third objective of the study. That is, because of the price mechanism, the information asymmetry was improved and the existence of fair trade was also proved. Undoubtedly, this was a remarkable case study which revealed that Taiwan's used car market had evolved from a lemon market to a market characterized by transparency and trust. In other words, market failure was improved when precise intervention was promoted properly.

However, it had long been the common belief that the used car market and information asymmetry always coexisted. Under information asymmetry, buyers usually possessed less information on used cars than sellers, so they generally remained in a disadvantaged position. As a result, adverse selection was rooted in the used car market, and high-quality used cars were crowded out of the market due to undervaluation. Accordingly, reputation was so inferior that even excellent dealers could not survive in the used car market.

As the study illustrated, Taiwan's used car market changed significantly. For example, third-party certification programs, including HOT, SUM, and SAVE, were widely employed. Specifically, the study took a fair arbiter as an example. With this help, buyers had more opportunities to obtain associated information to verify the quality of used cars. As a result, the framework made significant contributions to lowering consumer risk and strengthening the competitive advantage of sellers or dealers who were willing to sustain high-quality standards. Besides, it was evident that certification had a positive effect on enabling sellers of high-quality cars to receive a fair price. In other words, as long as high-quality cars consistently entered the market, the lemon market was reversed.

Furthermore, the Standardized Contract for Used Car Sales was officially employed in 2011, which was a remarkable measure to resolve problems derived from moral hazard. With clear and legal definitions of the rights and obligations of buyers and sellers, the contract made used car transactions more predictable and reliable. Consequently, transparency increased gradually, and both parties were provided with more information, which forced either party to reduce the possibility of behaving opportunistically.

In summary, third-party certification focused on reducing adverse selection, and moral hazard was improved by the standardized contract. The effects derived from the two measures influenced the market significantly. When buyers regarded information as reliable and trustworthy and understood that they were protected, they entered the market to make transactions. Therefore, when both parties received effective and sufficient information, the price mechanism functioned properly again. The results were that the volume of used cars became much higher than that of new cars due to the lower price, but not due to adverse selection. The study further revealed that buyers made decisions confidently when they had a full understanding of used car conditions. The phenomenon indicated that the market with a functioning price mechanism worked well and fair trade was achieved. Ultimately, the information asymmetry composed of adverse selection and moral hazard was replaced by fair trade.

Accompanied by the results that adverse selection and moral hazard were improved, a fair and healthy transaction environment characterized by transparency and trust was created to allocate resources effectively and efficiently. Accordingly, the market reduced unnecessary demand for new cars and shifted intention to used cars, which not only strengthened the recycling of given resources but also stimulated economic growth. Combining economic growth and environmental objectives, the results showed that Taiwan's used car market was characterized by fair trade and made a significant contribution to sustainability.

Summary

Adverse Selection

According to Table 1, It's evidence that the market mechanism still worked properly in Taiwan's used car market because used car sales had long been higher than new car sales. Obviously, adverse selection did not exist in Taiwan's used car market clearly.

Moral Hazard

Undoubtedly, consumer complaints could precisely explain the extent of moral hazard under information asymmetry. Table 2 verified that, over the past decade or so, consumer complaints in Taiwan's used car market have virtually disappeared from the top five categories of consumer disputes. This suggests that, in addition to adverse selection, moral hazard in Taiwan's used car market has also significantly improved.

Fair Trade

Combined with the improvements addressing adverse selection and moral hazard, the information asymmetry was simultaneously improved. Specifically, this improvement in information asymmetry could be interpreted as achieving fair trade due to the overall improved transparency, trust, and reliability in Taiwan's used car market.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

According to the research analysis, the study made several conclusions and contributions. First, Taiwan's used car market grew further and reflected the increasing demand for used cars. This was due to the price advantage and the emphasis on resource reuse. Accompanied by reduced information asymmetry, consumer demand increased significantly. In particular, four used car alliances and the active intervention of dealers had been built up, which further strengthened market transparency and consumer confidence.

Moreover, online platforms were used to offer detailed reports on inspections and after-sale commitments. With active government intervention, consumers were protected more reliably when purchasing used cars. It was evident that information asymmetry was present in the market, but market reforms made transactions fairer and more reliable. With advanced technology and intensive competition, the used car market was expected to become more transparent, efficient, and fair.

It needed to be stressed that advanced technology mattered significantly to the used car market. Taking blockchain as an example, it made the full records of maintenance, mileage, and ownership immutable for used cars. Furthermore, AI and big data were applied to enhance valuation, predict market tendencies, and provide sufficient information. These technological innovations strengthened efficiency on the one hand and lowered risk perception on the other. As a result, transactions in the used car market became more reliable and transparent than those in the new car market. Correspondingly, competition in the market focused more on transparency, service quality, and consumer satisfaction, and less on price alone.

Hence, the focus of the used car market has shifted from price to transparency and trust. In other words, consumers pay more attention to the security, transparency, and authenticity of transactions alongside affordability. Since the used car market is supported by the legal system, industry self-management, and innovation, it continues to evolve in a more sustainable and standardized direction. This creates a virtuous cycle that fills consumers with confidence, encourages dealers to promote service quality, and fosters steady development in the used car market.

Finally, the study concluded that consumer confidence was strengthened and fair trade was enhanced, which made direct contributions to sustainability because the used car market was highly transparent and reliable. With the growth of the used car market, vehicle lifecycles were extended further, and unnecessary new cars decreased, which made resource use more efficient, environmental burdens lower, and economic resilience stronger. Combined with strong trust and fair market operations, equitable participation between buyers and sellers strengthened social sustainability. Ultimately, the paradigm had changed from a market once marked as highly risky and inefficient to one integrated with transparency, trust, and reliability simultaneously improving market failures and information asymmetry, enhancing fair trade, and achieving both economic and environmental sustainability.

Recommendations

Though market transparency was increasing, the challenges never vanished. Particularly, the study reached conclusions that differed from most of those in other countries. Hence, it was necessary to collect more resources and documents and further explore the differences between subjective and objective, internal and external factors. For example, digital transformation might have been different due to remote areas or smaller resource distribution, which made information delivery more difficult. Besides, it could not be taken for granted that consumers accepted new technologies smoothly or that the government constructed regulations in a timely manner. Hence, it was indispensable to integrate modern technology into cooperation between the government and the industry.

Therefore, to achieve and expand the recommendations, the focus was concentrated on promoting digital platforms that were more robust, equitable, and widespread. This was a multi-dimensional approach combined with modern technology and was described as follows.

First of all, government intervention and standardization need to be involved. This is because the government has the responsibility for establishing clear and fair regulations and standardizing the inspection process for used cars. These practices improve consumer trust and create a fair field for dealers. Accordingly, the government plays a key role in sponsoring small and medium enterprises with financial incentives or resources and integrating digital technology into remote areas to ensure that transparency is rooted in both rural areas and urban centers.

Secondly, industry-led initiatives needed to be promoted. Both trade associations and industry headquarters needed to be combined to focus on digital information transparency. These practices consisted of a data platform for vehicle histories and records of maintenance and inspections, which were available to buyers and sellers, dealers, and consumers. Accordingly, to speed up the transition, it was essential to build education programs for dealers and implement digital tools effectively, because these programs enhanced information transparency, increased consumer satisfaction, and supported business growth.

Thirdly and finally, it was important for consumers to establish an education platform for the used car market. For instance, the public launched awareness campaigns to educate consumers to make use of digital tools and verify the conditions of used cars and their service quality. Once consumers were empowered with

knowledge, they increased the demand for transparency and forced dealers to adopt transparent practices. Therefore, the study strongly suggested that integrating the government, the industries, and the consumers was vital to making the used car market more trustworthy and sustainable.

Eventually, policymakers should further combine ESG indicators with the accounting system and apply accepted reporting schemes, including GRI, SASB, or TCFD, to strengthen sustainability outcomes. These measures are linked to corporate decisions and performance, which would ensure that insights are transparent, trustworthy, and actionable, thereby integrating economic, social, and environmental objectives with robust accounting practices.

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