

# Customizing Young Consumers' Traits in Domestic Cars through Personalized Virtual Shopping Experience

Jiandou Chen

Faculty of Design and Architecture, Universiti Putra Malaysia, 43300, Serdang, Malaysia

Zhaoqing University, China

E-mail: gs63829@student.upm.edu.my

Rahinah Ibrahim (Corresponding author)

Faculty of Design and Architecture, Universiti Putra Malaysia, 43300, Serdang, Malaysia

E-mail: rahinah@upm.edu.my

Athira Azmi

Faculty of Design and Architecture, Universiti Putra Malaysia, 43300, Serdang, Malaysia

E-mail: athira.azmi@upm.edu.my

Received: Oct. 18, 2024    Accepted: Dec. 15, 2024    Published: Feb. 6, 2025

doi:10.5296/ijssr.v13i1.22625    URL: <https://doi.org/10.5296/ijssr.v13i1.22625>

## Abstract

Younger consumers have become a dominant force in the Chinese automobile market. However, their aspiration to own luxurious cars contradicts their ability to purchase them. This study explores methods for expediting car-buying experience among young consumers when acquiring domestic national vehicles. This study conducts a desktop survey and reports the results of a systematic literature review synthesis aiming to provide the young buyers with a sense of luxury and exclusivity in their vehicle purchases. The survey covered buying experience, VR in shopping and personalized virtual shopping. This study found the younger generation is interested in using virtual reality (VR) technology—which enhances interactivity and immersive environments, fosters inclusivity and personalization, and expedites decision-making. Through the immersive virtual engagement, national automotive dealers could provide an effective and customized purchasing approach for young users as if they would undergo the traditional luxury car-buying experience. The results contribute to

understanding consumer behavior in the context of personalized virtual shopping experiences and propose a conceptual framework for expediting the buying experience among the young Chinese car buyers. The results advocate adopting immersive VR technologies tailored to accommodate customers' personalities. This approach seeks to offer a cost-effective, customized purchasing avenue, affording young users a luxurious car-buying experience while expediting the entire process in the context of the Chinese automotive market. Future studies are recommended to extend the realm of personalized virtual shopping experiences within the automotive sector and develop a framework for applying VR to automotive marketing.

**Keywords:** Automotive Marketing, Expediting buying experience, VR in shopping, Personalized virtual shopping, Sustainable Design Informatics

## 1. Introduction

Younger Chinese consumers are poised to dominate the future automotive market; thus, China is expected to experience significant growth in vehicle ownership (Chen, Lawell, & Wang, 2020). Their proclivity for embracing the latest trends and technologies, coupled with a strong inclination towards establishing emotional connections with their purchases, underscores younger consumers' distinct behavior (Chen, Rahinah, & Azmi, 2022). In recent years, due to China's drive towards new energy smart cars, this effort has gained unanimous praise both domestically and internationally. According to the China Automobile Manufacturers Association, the Chinese car brand BYD's sales surpassed Tesla's in 2023, making it the world's largest-selling new energy smart car.

Moreover, the government has implemented policies to strongly support the development of China's domestic cars to dominate the global auto market. The younger generation is a key target for domestic cars, as they have not yet formed strong attachments to car brands (Hwang & Kandampully, 2012). This presents an opportunity for domestic new energy smart cars to gain the recognition and purchasing power of this young group. However, increasing demand for domestic cars among young consumers with limited budgets requires significant time and effort. In the pursuit of owning luxury cars, such ownership may be long in coming, and traditional purchasing approaches may not resonate well with these younger consumers.

It is hereby proposed in this study to provide this market segment with an optimal car-buying experience, albeit through virtual reality (VR) technology. Such initiatives are crucial not only for meeting the evolving needs and preferences of younger consumers but also for catalyzing the growth of domestic car sales within the Chinese automotive market. This study concurs with previous research that has underscored the significant impacts of psychological dimensions—such as emotion, personality, and cognitive aspects—on the car-buying experiences of young individuals in China. Both Barrera and Ponce (2021) and Liem and Martin (2015) have emphasized the pivotal role played by psychological dimensions in shaping the preferences of Chinese youth, particularly in strengthening the relevance of emotional and cognitive aspects within the decision-making process.

To instill a sense of luxury in young users purchasing inexpensive cars, this study aims to investigate how individual differences in personality traits and emotional responses impact the perception of luxury. With this understanding, future research could design targeted strategies to enhance the perceived luxury of budget vehicles. This approach is intended to facilitate a deeper understanding of the psychological factors contributing to luxury perception, enabling the development of marketing and design initiatives that resonate with the emotional and personality profiles of young consumers. By following this direction, the research underscores the importance of considering the emotional experiences and personalities of younger consumers in their decision-making process when purchasing a car (Barrera & Ponce, 2021).

Manufacturers are recommended to offer more customizable options for car interiors, such as color schemes, upholstery materials, and tech features, to meet the emotional requirements of younger consumers (Hudson, 2021). Additionally, understanding emotions in the car-user

experience is expected to aid in developing adaptive assistance systems and improving safety and driving experiences (Steinhauser et al., 2018). Bayart et al. (2020) also suggest that car manufacturers should consider personalization features by providing more customizable options for young buyers. Future studies are recommended to analyze whether car manufacturers can consider perceived enjoyment to cater to the personalities and emotional needs of young buyers before purchasing a car.

The conclusion asserts that to instill a sense of luxury in the acquisition of budget-friendly domestic vehicles for young buyers, it is essential to understand the impact of individual personality traits and emotional reactions on the perception of luxury. The following presents the results of the desktop study and outlines a conceptual framework to enhance the car-buying experience for young Chinese car consumers. The goal of this exploration is to identify and analyze in depth the car purchasing strategies that are in line with China's young population.

## **2. Research Methodology**

The study employs the “Systematic Literature Review Synthesis Process” (Ibrahim & Mustafa Kamal, 2018 in Masiran et al., 2020) to identify relevant literature and establish a theoretical background for research ideation. This typology is recognized in the literature review field (Rousseau, Manning, & Denyer, 2008; Yu & Watson 2019; Templier & Paré, 2015) and proposes the main research question to contain three constructs: “WHO”, “WHAT”, and “HOW”, in defining the element being impacted, the knowledge that is required to solve the problem, and the targeted impact by the study (Ibrahim, 2011 & 2020).

The study selected “Expediting Buying Experience” as the “HOW” construct. Eighty-four literature articles were identified in Google Scholar and Scopus databases using keywords related to “Expediting Buying Experience,” such as buying experience, VR in shopping, and Personalized virtual shopping. After title search and filtering eighty-three full research papers from 2002 to 2023, a total of fifty-eight journal articles were identified. A detailed review was conducted on each article concerning their respective significant findings by prior scholars, how it could support future studies, and what aspects need to be improved to enhance the overall car sales in the market. The abstracts were then assigned to sub-topics based on their existential importance, as any new emerging topics may not have sufficient literature articles.

The outcomes of this activity produced a synthesized summary for each topic, which was then further cross-analyzed, integrated, and prioritized towards highly probable solutions for providing young buyers with a luxurious feeling and expediting buying decisions when buying affordable cars. The Point of Departure (POD) Tree Diagram was used to synthesize and summarize selected articles with high potential (Ibrahim & Mustafa Kamal, 2018). The documentation and synthesis process were documented using the online EAGLE System.

## **3. The Younger Generation**

This part deeply discusses the literature review of various difficulties, psychological motivations and preferences faced by young consumers when choosing and purchasing

automobiles. The goal is to reveal the distinctive characteristics of young customers in the automotive industry and the needs they pursue.

### *3.1 Challenges of Young Chinese Car Buyers*

China's younger generation's thirst for high-end brands has become a remarkable social phenomenon. Even with a tight budget, they still have firm dreams of acquiring luxury cars, a trend that has been studied (as described by Joy et al., 2012). Despite the possible economic challenges of acquiring a car, the desire for high-end enjoyment remains strong, suggesting that consumers value the symbolic and experiential value of an object more than its utility. This trend not only reflects the increasing demand of consumers but also highlights the social and cultural value of luxury ownership in the cultural context of modern Chinese society.

We need to delve into the nuanced preferences of young customers, understand how technology is driving their shopping, and explore strategies to meet their expectations for glamorous luxury experiences. To sum up, the enthusiasm of emerging consumer groups for high-end experience highlights the evolution trend of China's consumer market, in which symbolic and experiential values increasingly penetrate into the process of consumer choice. The goal of this study is to grasp and meet the preferences of the younger generation of consumers in order to provide excellent service in the process of car purchase, which is essential to follow the future consumer trends and market strategies.

### *3.2 Youthful Psychology in Car-buying*

Academic research highlights the key role of the psychological aspects of young car buyers in their car buying experience, including emotional, personality and cognitive elements. These factors are crucial to the formation of Chinese youth's preferences, especially the importance of emotional and cognitive factors in their choice process. Chen, Rahinah and Azmi (2022) provide insight into the specific factors that influence car purchase choices, combining personal preferences with a preference for cutting-edge technology features. Similarly, O'Connor et al. (2022) make a point of view was put forward: to optimize the car purchase process of consumers through five personality traits. The strategy is endorsed by Row, Kim, and Nam (2020), who highlighted the importance of emotional engagement in the automotive industry.

Just as Haerani et al. (2019) and Azmi et al. (2022) suggest, the paper highlights the role of atmosphere in shaping customer feelings and proposes an effective strategy to promote the emotional bond between the car and the consumer. As proposed by Hudson (2021) and Quintelier (2014), strategically consider the interior space of customized cars and understand the important role of psychological factors in shaping the car purchase orientation of young Chinese consumers. Only by deeply grasping and properly solving these problems, can the automobile manufacturing industry tailor its products to the special needs of this group, which may quietly change the demand trend of the national automobile market covering a wider level.

Although car dealers can't manipulate the living environment and salary status of young people, they can still prioritize and deal with their psychological satisfaction needs. Future

research can reveal how people's unique personality traits and emotional responses shape their perception of high-end goods, and then build strategic programs aimed at enhancing the perception of luxury attributes of economic vehicles. This study reveals that deepening the understanding of the psychological aspects of luxury perception can help domestic automobile manufacturers to launch more targeted marketing strategies and product designs, which are more in line with the emotional and personality needs of young customers.

### *3.3 Youthful Preferences in Car-buying*

In view of the consumption mentality of young people, it is particularly important to improve the car purchase process to cater to their unique preferences (Baltas & Saridakis 2013). It is worth noting that Ru, Qin, and Wang's research (2019) and Agosto's research (2002) all point out that the space feeling inside the vehicle plays a vital role in the car purchase choice of the younger generation. Understand the importance of this dimension of experience, so that relevant parties in the automotive field can plan strategies and implement innovations to meet the fine needs and expectations of the younger generation of Chinese consumers, thereby enhancing their motivation to buy cars.

In addition, as suggested by Zong, Zhang, and Jiang (2019) and Meena, Singh, and Jodha (2021), the fast pace of urban life requires everyone to work together to make the process of buying a car easier. Improving the efficiency and convenience of the transaction process has a decisive impact on motivating young shoppers to make quick choices. The study advocates a strategy of using accessible and low-cost technologies to cater to the specific needs of young consumers. This strategy plays a key role in maintaining their enthusiasm and sense of participation in the process of car purchase.

In light of the constantly evolving consumer landscape, it is crucial for the automotive industry to closely consider the younger generation's desire for luxury experiences despite their financial limitations. Future research could explore the potential of leveraging technology to enhance sales strategies. This could include offering a range of cost-effective alternatives that allow young Chinese consumers to customize their cars' interiors according to their unique preferences. By providing options for various interior designs at lower costs, automotive companies can increase marketing flexibility and appeal. This approach would enable sales teams to not only meet the diverse tastes of young consumers but also enhance the likelihood of closing sales with local domestic cars, thereby ensuring consumer satisfaction.

## **4. Expediting Buying Experience**

This section discusses expediting buying experience into buying experience, VR in shopping, and personalized virtual shopping.

### *4.1 Buying Experience*

The buying experience is a series of steps and interactions in the shopping process, covering all stages from initial understanding to after-sales service (Pham & Sun, 2020). The factors affecting buying experience include commodity display, service attitude, convenience of

transaction and follow-up customer communication. Positive buying experiences help shape consumer satisfaction, loyalty, and word-of-mouth recommendations (Mishra et al., 2021). Negative experiences often cause customers to stop coming back. Therefore, this study agrees that shaping the ultimate consumer experience requires insight into the voice of consumers, creating a smooth and uninterrupted service, and cultivating positive feelings in the process of customer consumption.

Researchers Tan, Foo, and Kwek (2004) revealed a study that consumers' personality traits may play a role in the positive emotional display of service workers. Therefore, the study suggests that car dealers should focus on exploring the personality and preferences of consumers, so as to create a pleasant car purchase process. As highlighted by Daqar and Smoudy (2019) in their discussion, this study provides insight into the possibility of providing a customized customer service experience across the entire shopping journey. By providing personalized customer service, car dealerships can create a sense of value and trust with their customers, which could improve the overall buying experience.

Hinterhuber, Snelgrove, and Stensson (2021) proposed that joint value creation should be central to customer and supplier relationships. Applying this principle to the car buying experience, there is potential for car dealerships to create a win-win situation by providing value-added services that align with their customers' preferences. For example, car dealerships can offer test drives that cater to the individual needs and preferences of their customers. Drawing on this, Halim (2018) highlighted the importance of using advanced technology to improve efficiency and reduce costs. Car dealerships can leverage technology to streamline the buying process and provide customers with a seamless experience. Using the online car trading platform, consumers can easily buy new cars at home, which has become an alternative strategy.

Recent studies (Ahearne et al., 2022; Grewal & Roggeveen, 2020) showed that in the future, the interaction between buyers and sellers may no longer rely mainly on face-to-face dialogue. The study points out that the integration of emerging interaction methods and technologies is of great significance for accelerating the process of consumer choice. To facilitate feedback on this proposal, the study plans to increase the emphasis on online pavilions, online interactions, and virtual reality experiences. If the automotive industry intends to enhance the experience of car purchases, the shopping process of consumers may become more complex, which requires more detailed insight into the perception, emotion and action response of consumers.

In order to enable young consumers to enjoy a premium experience when choosing affordable models, it is crucial to optimize every step of their car purchase process, from initial awareness formation to subsequent customer service support (Pham & Sun 2020). Key elements include excellent product display, customized customer assistance, smooth buying and selling process, and engaging after-sales communication (Mishra et al., 2021). Tailoring services to individual preferences has been shown to foster positive emotions (Daqar & Smoudy, 2019). Additionally, leveraging advanced technologies like online platforms and virtual reality could streamline the process and enhance the luxury feel (Halim, 2018; Grewal

& Roggeveen, 2020). Integrating these elements could create a luxurious experience for budget car buyers.

Taking into account the findings of the above study, this study reveals that the integration of customization and virtual reality technology may create a novel and efficient shopping experience for young consumers. Therefore, this discussion proposes that automobile manufacturers should pay attention to the unique attributes of consumers, create collaborative value with consumers, customize the interactive experience of consumers, streamline their car purchase process, and provide consumers with a smooth and uninterrupted service experience with the help of cutting-edge technology. In order to enhance the car-buying experience of young Chinese consumers and promote sales growth, this article will discuss the possibility of using virtual reality to enhance the car-buying experience.

#### *4.2 VR in Shopping*

In anticipating a greater focus on digital showrooms, online chats, and virtual reality experiences, this paper discusses the possibilities for expediting the car-buying experience for young consumers.

The pervasive impact of digitalization on industries, customer behaviors, and sales models within the automotive sector has been highlighted by Bacher and Manowicz (2020). This transformation encompasses various aspects of business and sales models. Bhatti, Mohan, and Singh (2021) emphasize the revolutionary potential of digitalization in intelligent electric vehicles, targeting subsystems like autonomous navigation, driver assistance, health monitoring, and power systems. In online automobile sales, traditional platforms utilizing the Internet and mobile devices (Mahi, Maliha, & Sakib 2020) may be more acceptable to a mature clientele compared to younger demographics.

The digitalization of the automobile purchasing process has been facilitated by advancements in virtual technology. This recommendation is supported by Husár et al. (2022), who assert that augmented reality (AR) has emerged as a tool for transferring the 3D dimension to customers, allowing for the personalization of car models based on individual preferences. Moreover, current publicly available applications enable users to choose the car's type, color, design, and equipment and project the configured car into space using a mobile phone. Beyond marketing, Henriques and Winkler (2021) recommend extending the utilization of VR in automotive marketing research while reminding researchers to be critical of factors such as hardware and software specifications, stimulus quality, and survey objectives.

Compared to AR, VR technology can provide young consumers with a more immersive buying experience during car customization. This personalized design meets the customer's expectation of the feeling of interior space in the process of car purchase. In addition, a scholarly inquiry has highlighted the role of environmental constructs in generating purchase intent, both in real and online spaces (Azmi et al., 2022). An Ambient atmosphere covers a variety of sensory stimuli, such as vision, hearing and touch, which work together to create a perceptual impression of a specific area or scene (Kim & Dey 2016). Azmi et al. (2023) highlighted the profound role of atmosphere elements in virtual spaces in enhancing user



satisfaction and entertainment experiences.

In addition, virtual reality may become a fashionable means to enhance customers' experience of the shopping process, and research shows that it has a positive effect on user experience (UX) and can improve consumption desire. Research by Kang, Shin, and Ponto (2020) showed that VR can help provide a richer product selection. Research showed that, Pettersson, Karlsson, and Ghiurau (2019) jointly confirmed that there is a link between virtual reality and user experience scores. In addition, studies have revealed that the whole-body immersion experience of virtual reality (VR) is enjoyable and recognized by the elderly (see the work of Arlati et al., 2021). For young people who are skilled in science and technology, this thing may contain higher practical efficiency. Virtual reality technology can enhance customers' pleasure in the shopping process (Lau & Lee 2019). The broad implications of this study highlight the key role of exploring virtual reality technology in optimizing the shopping experience and enhancing consumer pleasure.

Furthermore, Elboudali et al. (2020) built a framework that incorporates virtual reality (VR) technology, with the aim of using customer interaction in VR malls to gain insight into customer behavior. Research shows that with the help of a virtual car model experience, consumers can deeply understand the characteristics, shapes and functions of vehicles in an immersive interactive space. The service guarantees to simplify the car purchase process by reducing the number of times buyers visit the dealership, thus saving valuable time and energy for consumers.

According to the analysis of this study, with the help of virtual reality technology, a new, highly participatory and customized shopping atmosphere may be created, which may not only accelerate the car purchase process of young Chinese consumers, but also significantly improve their shopping experience satisfaction, thus having a fundamental positive impact on the car purchase process. By means of fictional scenes, automobile dealers can deeply grasp the valuable opinions of customers and efficiently meet their requirements, thus improving sales performance and revenue. Therefore, this study strongly recommends the use of immersive virtual reality technology to create an interactive and stimulating car purchase experience, so as to help young Chinese consumers accelerate the car purchase process. Virtual reality technology, which is expected to improve vehicle evaluation and satisfaction selection, can unlock deep customer insights for marketing experts.

#### *4.3 Personalized Virtual Shopping*

Personalized virtual shopping process can significantly accelerate the shopping experience of consumers, thereby enhancing the overall feeling of automobile consumers and meeting their personalized needs. This paper analyzes the penetration of personalized virtual experience in automobile consumer behavior.

As an emerging technology, virtual reality is rapidly integrating into public life, and it has the ability to transform the customer's experience of the purchase process. Recent academic research has shown that panoramic virtual reality (VR) scenes can significantly enhance the interactive experience of consumers, thereby stimulating their purchase motivation (Kang,

Shin, & Ponto, 2020), and that the technology can also help optimize the operational efficiency of network platforms and promote product sales growth (Park & Kim, 2023). In the virtual reality shopping space, it is still unknown how consumers' personality affects their purchase decisions (see Schnack, Wright, & Elms's research in 2021), although it has been confirmed that personality traits can affect the feeling of virtual reality experience (Aranha et al., 2018). In addition, in the process of building a virtual shopping experience, in addition to focusing on individual characteristics, it is also necessary to take into account privacy protection, cognitive level, and the user's previous experience in the use of technology and other aspects (see the research results of Riar et al., 2022). Their research reveals that motivating customers to participate in the study and evaluation of personalized online shopping processes can ensure a satisfying, convenient and sales-promoting digital shopping experience.

Other researchers, such as Pillai, Sivathanu, and Dwivedi (2020) and Laukkanen et al. (2022), have also pointed out this point. Studies have shown that for AI retail stores, customers' shopping intentions can be predicted based on their perception of the practicality of technology, the convenience of use and the degree of personalized customization. In addition, virtual reality technology can significantly enhance its influence on consumer choice. In the process of car purchase, digital scenarios can streamline the personalized settings of vehicle functions and provide useful vehicle information, which helps to enhance the interest of young consumers in car purchases. The work by Ameen et al. (2021) highlighted that overcoming psychological and cultural difficulties is essential to promote the popularity of self-service shopping systems, which is supported by De and Johar's research (2020). By addressing these challenges, the virtual car-buying experience will become more accessible and broaden its base of potential customers. Additionally, Smink et al. (2019) and Rhee and Choi (2020) point to personalization, spatial presence, and social role as contributors to building positive attitudes toward products and enhancing purchase intentions in virtual shopping environments.

Purchasing a car by a young consumer is akin to purchasing a home by a family. Despite Azmi et al. (2023) findings, potential homebuyers would still want to visit and experience an actual show house. Therefore, the same can be assumed for young customers when they are in the market to purchase a car. Their study did not include the personality traits of the homebuyers nor their cognitive ability. It is here that this study proposes to enhance personalized virtual shopping experiences by integrating aspects of individual shopper personality traits with the aim of expediting the buying experience among young Chinese car buyers. Supporting individual personality traits through VR technologies could also promote sustainable consumption and enhance empathy, flow, and spatial presence in their shopping experiences. In fact, another benefit of VR is allowing young customers to fully immerse themselves in a virtual environment and explore car models in detail. Therefore, this study posits that VR technologies could enhance the buying experience for young Chinese car buyers by supporting their personality traits, enhancing previous experience with the technology, and applying cognitive ability for decision-making to purchase.

## 5. Discussion

This section presents the cross-analyses, integration, and prioritization of highly probable solutions for expediting the buying experience among young car buyers. The results are presented in the Point of Departure (POD) Tree Diagram (see Figure 1) to find an efficient and cost-effective way of purchasing that matches the character traits of young people. A likelihood scenario is envisioned where young buyers using VR technology could have an immersive experience of their preferred car and make simple interior customizations, thus allowing these potential young consumers to experience an efficient and personalized buying experience during the purchase process. In light of this opportunity, this study recommends considering the context of a young person’s personality, technology familiarity, and cognitive ability.

This study has revealed a notable receptiveness among millennials towards Virtual Reality (VR) technology. It found VR technology could significantly augment the interactive and immersive environment for young consumers. In this context, this study proposes that VR facilities could deliver a better understanding of domestic automobiles to young consumers while fostering their inclusiveness and personalized experiences. This study posits that increased engagement with VR technology could potentially expedite the decision-making process for customers. For automotive companies, integrating VR technology may represent a promising avenue to enhance customer engagement and ultimately drive sales.

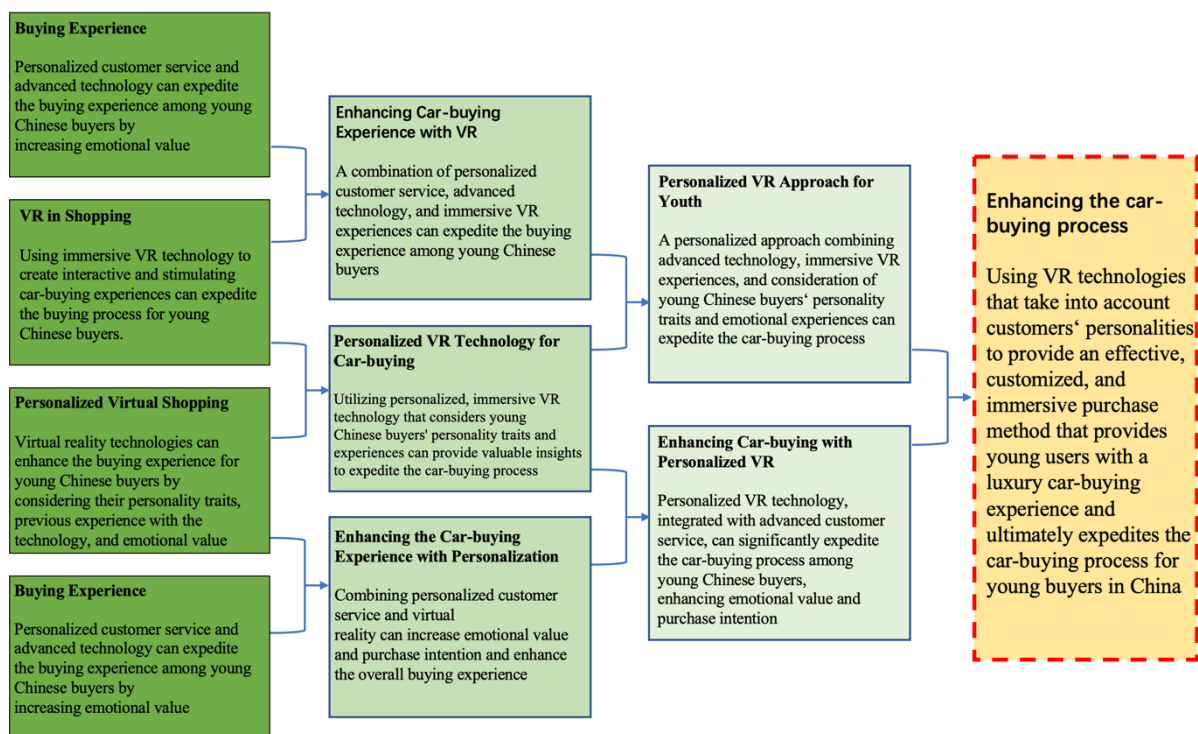


Figure 1. Point of Departure (POD) Tree Diagram for Expediting Buying Experience (Adapted from Ibrahim & Mustafa Kamal, 2018)

In today's competitive automotive market, car companies are recommended to provide a buying experience that caters to the needs and preferences of young Chinese consumers. In view of this, it is essential to consider their personality traits, previous experience with technology, and cognitive ability for decision-making. To this end, further studies are needed to obtain information on customers' personalities and preferences. Subsequently, more studies could be conducted to develop personalized virtual surroundings in which the cars could be presented, the features highlighted, and the language used in the product descriptions. Based on the POD Tree Diagram development in Figure 1, this paper also proposes a conceptual framework for using VR technologies that take into account customers' personalities to provide an effective, customized, and immersive purchase method that offers young users a luxury car-buying experience, ultimately expediting the car-buying process for young buyers in China. Figure 2 illustrates how the key elements interact to form a conceptual framework for future research.

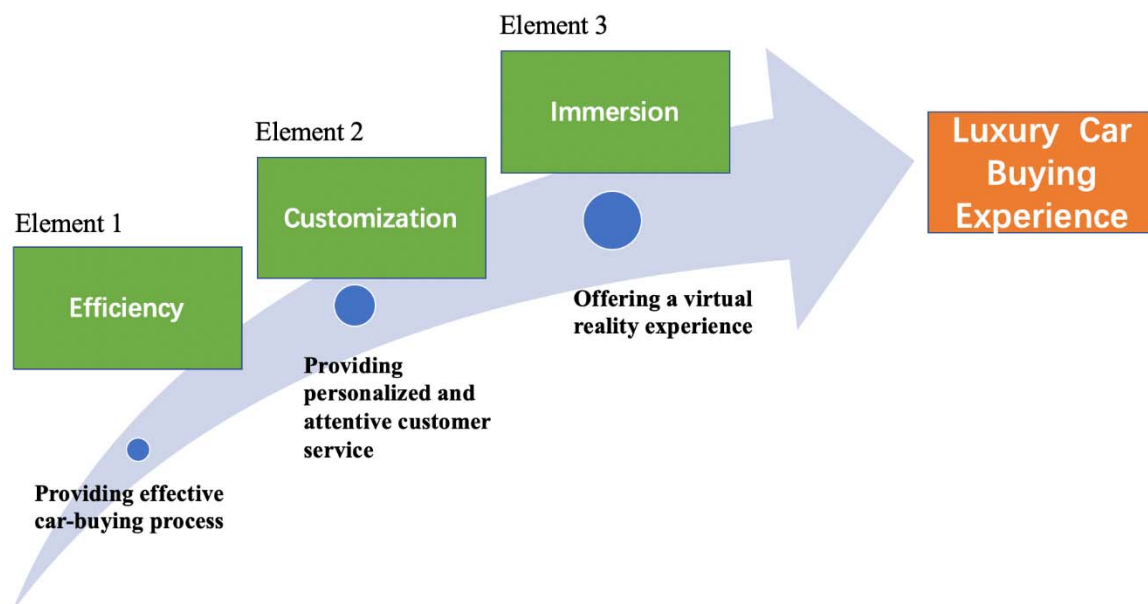


Figure 2. Proposed Conceptual Framework for Expediting Buying Experience Among the Young Chinese Car buyers

A pilot survey was conducted based on the conceptual framework, utilizing a 5-point scale questionnaire. A total of 50 responses were collected from participants in China, see Table 1. The demographic profile of the respondents indicates that the majority (56%) are aged between 23–32 years. The gender distribution is balanced, with an equal representation of male and female participants, ensuring a range of perspectives in the analysis. Educational backgrounds are diverse, with approximately one-third of respondents having completed junior high or high school, while 14% have attained postgraduate degrees or higher. In terms of income, the majority of respondents (48%) fall within the mid-to-upper income bracket,

earning between 8,100–10,000 CNY. Additionally, 70% of respondents already own a car, suggesting they have prior experience with the car-buying process. The remaining 30%, who do not currently own a car, represent potential future buyers. Overall, the sample comprises a group of young, financially capable consumers, a significant portion of whom are already familiar with car ownership. This makes them an ideal target audience for exploring how VR technologies can be utilized to enhance the car-buying experience.

Table 1. Respondents background analysis

Age (years old)	Frequency	Percent	Cumulative Percent
18–22	12	24	24
23–27	14	28	52
28–32	14	28	80
33–35	10	20	100.0
Total	50	100.0	

Gender	Frequency	Percent	Cumulative Percent
Male	25	50	50
Female	25	50	100.0
Total	50	100.0	

Level of Education	Frequency	Percent	Cumulative Percent
Junior high school	15	30	30
High school	15	30	60
College	13	26	86
Postgraduate or above	7	14	100.0
Total	50	100.0	

Income Level (CNY)	Frequency	Percent	Cumulative Percent
Below 3,000	0	0	0
3,000-5,000	7	14	14
5,100-8,000	13	26	40
8100-10,000	24	48	88
Above 10,000	6	12	100.0
Total	50	100.0	

Own Cars	Frequency	Percent	Cumulative Percent
Yes	35	70	70
No	15	30	100.0
Total	390	100.0	

From Table 2, it was found that most young people have generally positive attitudes towards

new experiences ( $M = 3.48$ ,  $SD = 1.282$ ) and technology ( $M = 3.52$ ,  $SD = 1.216$ ). Similarly, the preference for personalized and unique shopping experiences ( $M = 3.52$ ,  $SD = 1.328$ ) suggests a moderate interest in customization.

When it comes to familiarity with Virtual Reality (VR) technologies, respondents are fairly familiar with VR ( $M = 3.7$ ,  $SD = 1.074$ ). The willingness to use VR for purchasing a car is even higher ( $M = 3.96$ ,  $SD = 0.989$ ), indicating a strong openness to adopting this technology for car buying. The influence of VR on car-buying decisions is also significant ( $M = 4.02$ ,  $SD = 0.937$ ), showing that VR test drives could substantially impact purchasing choices.

In terms of specific aspects of the VR car-buying experience, the results show that efficiency ( $M = 3.48$ ,  $SD = 1.282$ ), customization ( $M = 3.54$ ,  $SD = 1.281$ ), and immersion ( $M = 3.58$ ,  $SD = 1.311$ ) are all viewed as moderately important. Among these, immersion is valued slightly more than efficiency and customization.

Overall, the data suggest that respondents are generally receptive to using VR in the car-buying process, particularly valuing its capacity to influence their purchasing decisions and offer an immersive experience. Furthermore, the survey supports the potential of VR car-buying to evoke a sense of luxury among younger consumers, aligning with and supporting the proposed framework.

Table 2. Descriptive analysis data

Item	N	Minimum	Maximum	Mean	Std. Deviation
I am open to new experience	50	1	5	3.48	1.282
I enjoy trying out new technologies	50	1	5	3.52	1.216
I prefer personalized and unique shopping experiences	50	1	5	3.52	1.328
The level of familiarity with Virtual Reality (VR) technologies	50	1	5	3.7	1.074
The willingness to use VR for purchasing a car	50	1	5	3.96	0.989
The influence of virtual reality on car buying decisions	50	1	5	4.02	0.937
The efficiency on VR car-buying experience	50	1	5	3.48	1.282
The customization on VR car-buying experience	50	1	5	3.54	1.281
The immersion on VR car-buying experience	50	1	5	3.58	1.311

## 6. Conclusion

This study presents the findings derived from a comprehensive desktop survey encompassing aspects related to the buying experience, the potential application of Virtual Reality (VR) in shopping, and the methodology of personalized virtual shopping. The primary objective is to give young buyers a perception of luxury and exclusivity in their vehicle acquisitions,

notwithstanding budgetary constraints, aiming to bolster overall car sales. The results advocate for adopting immersive VR technologies tailored to accommodate customers' personalities. This approach is expected to offer a cost-effective, customized purchasing avenue, affording young users a luxurious car-buying experience while expediting the entire process in the context of the Chinese automotive market.

The results of this study provide an understanding of consumer behavior in the context of personalized virtual shopping experiences and propose a conceptual framework for expediting the buying experience among young Chinese car buyers. This study is significant in guiding car dealers to improve the efficiency and effectiveness of car sales strategies targeted at the younger consumer demographic by using VR technology. The proposed conceptual framework contributes to advancing personalized virtual shopping experiences within the automotive sector.

### Acknowledgments

This study is part of the first author's PhD thesis in Integrated Design Studies at the Faculty of Design and Architecture, Universiti Putra Malaysia. This study received its ethics approval from Zhaoqing University Ethics Committee (China) for Research Involving Human Subjects Ref. 202412 dated May 23, 2024.

### References

- Agosto, D. E. (2002). A model of young people's decision-making in using the Web. *Library & Information Science Research*, 24(4), 311–341. [https://doi.org/10.1016/S0740-8188\(02\)00131-7](https://doi.org/10.1016/S0740-8188(02)00131-7)
- Ahearne, M., Atefi, Y., Lam, S. K., & Pourmasoudi, M. (2022). The future of buyer-seller interactions: A conceptual framework and research agenda. *Journal of the Academy of Marketing Science*, 1–24. <https://doi.org/10.1007/s11747-021-00803-0>
- Ameen, N., Tarhini, A., Shah, M., & Madichie, N. O. (2021). Going with the flow: smart shopping malls and omnichannel retailing. *Journal of Services Marketing*, 35(3), 325–348. <https://doi.org/10.1108/JSM-02-2020-0066>
- Aranha, R. V., Nakamura, R., Tori, R., & Nunes, F. L. (2018, October). Personality traits impacts in virtual reality's user experience. In *2018 20th Symposium on Virtual and Augmented Reality (SVR)* (pp. 47–56). IEEE. <https://doi.org/10.1109/SVR.2018.00019>
- Arlati, S., Di Santo, S. G., Franchini, F., Mondellini, M., Filiputti, B., Luchi, M., ... Greci, L. (2021). Acceptance and usability of immersive virtual reality in older adults with objective and subjective cognitive decline. *Journal of Alzheimer's Disease*, 80(3), 1025–1038. <https://doi.org/10.3233/jad-201431>
- Azmi, A., Ibrahim, R., Abdul Ghafar, M., & Rashidi, A. (2022). Smarter real estate marketing using virtual reality to influence potential homebuyers' emotions and purchase intention. *Smart and Sustainable Built Environment*, 11(4), 870–890. <https://doi.org/10.1108/SASBE-03-2021-0056>

Azmi, A., Ibrahim, R., Ghafar, M. A., & Rashidi, A. (2023). *Metaverse for real estate marketing: The impact of virtual reality on satisfaction, perceived enjoyment and purchase intention*. <https://doi.org/10.21203/rs.3.rs-2584882/v1>

Bacher, N., & Manowicz, A. A. (2020). DIGITAL AUTO CUSTOMER JOURNEY-AN ANALYSIS OF THE IMPACT OF DIGITALIZATION ON THE NEW CAR SALES PROCESS AND STRUCTURE. *International Journal of Sales, Retailing & Marketing*, 9(2), 16. ISSN 2045-810X.

Baltas, G., & Saridakis, C. (2013). An empirical investigation of the impact of behavioural and psychographic consumer characteristics on car preferences: An integrated model of car type choice. *Transportation Research Part A: Policy and Practice*, 54, 92–110. <https://doi.org/10.1016/j.tra.2013.07.007>

Barrera, G. A., & Ponce, H. R. (2021). Personality traits influencing young adults' conspicuous consumption. *International Journal of Consumer Studies*, 45(3), 335–349. <https://doi.org/10.1111/ijcs.12623>

Bayart, C., Havet, N., Bonnel, P., & Bouzouina, L. (2020). Young people and the private car: A love-hate relationship. *Transportation Research Part D: Transport and Environment*, 80, 102235. <https://doi.org/10.1016/j.trd.2020.102235>

Bhatti, G., Mohan, H., & Singh, R. R. (2021). Towards the future of smart electric vehicles: Digital twin technology. *Renewable and Sustainable Energy Reviews*, 141, 110801. <https://doi.org/10.1016/j.rser.2021.110801>

Chen, Y., Lawell, C. Y. C. L., & Wang, Y. (2020). The Chinese automobile industry and government policy. *Research in Transportation Economics*, 84, 100849. <https://doi.org/10.1016/j.retrec.2020.100849>

Daqar, M. A. A., & Smoudy, A. K. (2019). The role of artificial intelligence on enhancing customer experience. *International Review of Management and Marketing*, 9(4), 22. <https://doi.org/10.32479/irmm.8166>

De Bellis, E., & Johar, G. V. (2020). Autonomous shopping systems: Identifying and overcoming barriers to consumer adoption. *Journal of Retailing*, 96(1), 74–87. <https://doi.org/10.1016/j.jretai.2019.12.004>

Elboudali, A., Aoussat, A., Mantelet, F., Bethomier, J., & Leray, F. (2020). A customised virtual reality shopping experience framework based on consumer behaviour: 3DR3CO. *International Journal on Interactive Design and Manufacturing (IJIDeM)*, 14(2), 551–563. <https://doi.org/10.1007/s12008-020-00645-0>

Grewal, D., & Roggeveen, A. L. (2020). Understanding retail experiences and customer journey management. *Journal of Retailing*, 96(1), 3–8. <https://doi.org/10.1016/j.jretai.2020.02.002>

Haerani, S., Parmitasari, R. D. A., Aponno, E. H., & Aunalal, Z. I. (2019). Moderating effects of age on personality, driving behavior towards driving outcomes. *International Journal of*



- Human Rights in Healthcare*, 12(2), 91–104. <https://doi.org/10.1108/IJHRH-08-2017-0040>
- Halim, A. A. (2018). Applications of augmented reality for inspection and maintenance process in automotive industry. *Journal of Fundamental and Applied Sciences*, 10(3S), 412–421.
- Henriques, A. C., & Winkler, I. (2021). The advancement of virtual reality in automotive market research: challenges and opportunities. *Applied Sciences*, 11(24), 11610. <https://doi.org/10.3390/app112411610>
- Heydarian, A., Carneiro, J. P., Gerber, D., Becerik-Gerber, B., Hayes, T., & Wood, W. (2015). Immersive virtual environments versus physical built environments: A benchmarking study for building design and user-built environment explorations. *Automation in Construction*, 54, 116–126. <https://doi.org/10.1016/j.autcon.2015.03.020>
- Hinterhuber, A., Snelgrove, T. C., & Stensson, B. I. (2021). Value first, then price: The new paradigm of B2B buying and selling. In *Value First, Then Price* (pp. 17–25). Routledge. <https://doi.org/10.4324/9781003177937-4>
- Hudson, N. W. (2021). Dynamics and processes in personality change interventions. In *The handbook of personality dynamics and processes* (pp. 1273–1295). Academic Press. <https://doi.org/10.1016/B978-0-12-813995-0.00050-9>
- Husár, J., Hrehova, S., Knapčíková, L., & Trojanowska, J. (2022, December). A New Trend in Car Personalization Based on Augmented Reality: A Study. In *EAI International Conference on Smart Cities within SmartCity360° Summit* (pp. 165–178). Cham: Springer Nature Switzerland. [https://doi.org/10.1007/978-3-031-28225-6\\_11](https://doi.org/10.1007/978-3-031-28225-6_11)
- Hwang, J., & Kandampully, J. (2012). The role of emotional aspects in younger consumer-brand relationships. *Journal of Product & Brand Management*, 21(2), 98–108. <https://doi.org/10.1108/10610421211215517>
- Ibrahim, R. (2008). Setting up a research question for determining the research methodology. *ALAM CIPTA International Journal on Sustainable Tropical Design Research & Practice*, 3(1), 99–102. Retrieved from <http://frsb.upm.edu.my/alamcipta/index.php/alamcipta/article/view/42/28>
- Ibrahim, R. (2011). Demystifying the arduous doctoral journey: The eagle vision of a research proposal. *Electronic Journal of Business Research Methods*, 9(2), 130–140. <https://academic-publishing.org/index.php/ejbrm/article/view/1275/1238>
- Ibrahim, R., & Mustafa Kamal, R. (2018). *Templates for Thinking*. Unpublished Literary. Copyright MYIPO LY2018002437, 260.
- Jiandou, C., Ibrahim, R., & Azmi, A. (2022). The Main Car-Buying Characteristics of a Young Generation. *Asian Journal of Research in Business and Management*, 4(3), 692–697. <https://doi.org/10.55057/ajrbm.2022.4.3.59>
- Joy, A., Sherry Jr, J. F., Venkatesh, A., Wang, J., & Chan, R. (2012). Fast fashion,

sustainability, and the ethical appeal of luxury brands. *Fashion Theory*, 16(3), 273–295. <https://doi.org/10.2752/175174112X13340749707123>

Kang, H. J., Shin, J. H., & Ponto, K. (2020). How 3D virtual reality stores can shape consumer purchase decisions: The roles of informativeness and playfulness. *Journal of Interactive Marketing*, 49(1), 70–85. <https://doi.org/10.1016/j.intmar.2019.07.002>

Kim, S., & Dey, A. K. (2016). Augmenting human senses to improve the user experience in cars: Applying augmented reality and haptics approaches to reduce cognitive distances. *Multimedia Tools and Applications*, 75, 9587–9607. <https://doi.org/10.1007/s11042-015-2712-4>

Lau, K. W., & Lee, P. Y. (2019). Shopping in virtual reality: a study on consumers' shopping experience in a stereoscopic virtual reality. *Virtual Reality*, 23(3), 255–268. <https://doi.org/10.1007/s10055-018-0362-3>

Laukkanen, T., Xi, N., Hallikainen, H., Ruusunen, N., & Hamari, J. (2022). Virtual technologies in supporting sustainable consumption: From a single-sensory stimulus to a multi-sensory experience. *International Journal of Information Management*, 63, 102455. <https://doi.org/10.1016/j.ijinfomgt.2021.102455>

Liem, G. A. D., & Martin, A. J. (2015). Young people's responses to environmental issues: Exploring the roles of adaptability and personality. *Personality and Individual Differences*, 79, 91–97. <https://doi.org/10.1016/j.paid.2015.02.003>

Mahi, S. H., Maliha, U. H., & Sakib, S. (2020, July). Development of Web and Mobile Application Based Online Buy, Sell and Rent Car System. In *2020 Advanced Computing and Communication Technologies for High Performance Applications (ACCTHPA)* (pp. 143–147). IEEE. <https://doi.org/10.1109/ACCTHPA49271.2020.9213208>

Masiran, R., Ibrahim, N., Awang, H., & Lim, P. Y. (2020). Improving multicultural parenting program for children with emotional and behavioral problems: an integrated review. *Asian Journal of Psychiatry*, 51, 101851. <https://doi.org/10.1016/j.ajp.2019.101851>

Meena, S., Singh, S. K., & Jodha, K. (2021). Identification of psychological factors associated with car ownership decisions of young adults: case study of Jodhpur city, India. *Asian Transport Studies*, 7, 100037. <https://doi.org/10.1016/j.eastsj.2021.100037>

Mishra, A., Shukla, A., Rana, N. P., & Dwivedi, Y. K. (2021). From “touch” to a “multisensory” experience: The impact of technology interface and product type on consumer responses. *Psychology & Marketing*, 38(3), 385–396. <https://doi.org/10.1002/mar.21436>

O'Connor, P. J., Moss, J., Adams, J., Matemberere, C., & Kaya, M. (2022). What drives consumer automobile choice? Investigating personality trait predictors of vehicle preference factors. *Personality and Individual Differences*, 184, 111220. <https://doi.org/10.1016/j.paid.2021.111220>

Park, H., & Kim, S. (2023). Do augmented and virtual reality technologies increase consumers' purchase intentions? The role of cognitive elaboration and shopping

goals. *Clothing and Textiles Research Journal*, 41(2), 91–106.  
<https://doi.org/10.1177/0887302X21994287>

Peng, L., & Luo, S. (2021). Impact of social economic development on personality traits among Chinese college students: A cross-temporal meta-analysis, 2001–2016. *Personality and Individual Differences*, 171, 110461. <https://doi.org/10.1016/j.paid.2020.110461>

Pettersson, I., Karlsson, M., & Ghiurau, F. T. (2019, June). Virtually the same experience? learning from user experience evaluation of in-vehicle systems in vr and in the field. In *Proceedings of the 2019 on Designing Interactive Systems Conference* (pp. 463–473). <https://doi.org/10.1145/3322276.3322288>

Pham, M. T., & Sun, J. J. (2020). On the experience and engineering of consumer pride, consumer excitement, and consumer relaxation in the marketplace. *Journal of Retailing*, 96(1), 101–127. <https://doi.org/10.1016/j.jretai.2019.11.003>

Pillai, R., Sivathanu, B., & Dwivedi, Y. K. (2020). Shopping intention at AI-powered automated retail stores (AIPARS). *Journal of Retailing and Consumer Services*, 57, 102207. <https://doi.org/10.1016/j.jretconser.2020.102207>

Quintelier, E. (2014). The influence of the Big 5 personality traits on young people’s political consumer behavior. *Young Consumers*, 15(4), 342–352. <https://doi.org/10.1108/YC-09-2013-00395>

Rhee, C. E., & Choi, J. (2020). Effects of personalization and social role in voice shopping: An experimental study on product recommendation by a conversational voice agent. *Computers in Human Behavior*, 109, 106359. <https://doi.org/10.1016/j.chb.2020.106359>

Riar, M., Xi, N., Korbek, J. J., Zarnekow, R., & Hamari, J. (2022). Using augmented reality for shopping: a framework for AR induced consumer behavior, literature review and future agenda. *Internet Research*, 33(1), 242–279. <https://doi.org/10.1108/INTR-08-2021-0611>

Rousseau, D. M., Manning, J., & Denyer, D. (2008). 11 Evidence in management and organizational science: assembling the field’s full weight of scientific knowledge through syntheses. *Academy of Management Annals*, 2(1), 475–515. <https://doi.org/10.5465/19416520802211651>

Row, Y. K., Kim, S. Y., & Nam, T. J. (2020). Using pet-dog behavior traits to enhance the emotional experience of in-car interaction. *International Journal of Design*, 14(1), 19–34. <http://hdl.handle.net/10203/274327>

Ru, X., Qin, H., & Wang, S. (2019). Young people’s behaviour intentions towards reducing PM2. 5 in China: Extending the theory of planned behaviour. *Resources, Conservation and Recycling*, 141, 99–108. <https://doi.org/10.1016/j.resconrec.2018.10.019>

Schnack, A., Wright, M. J., & Elms, J. (2021). Investigating the impact of shopper personality on behaviour in immersive Virtual Reality store environments. *Journal of Retailing and Consumer Services*, 61, 102581. <https://doi.org/10.1016/j.jretconser.2021.102581>

Smink, A. R., Frowijn, S., van Reijmersdal, E. A., van Noort, G., & Neijens, P. C. (2019). Try online before you buy: How does shopping with augmented reality affect brand responses and personal data disclosure. *Electronic Commerce Research and Applications*, 35, 100854. <https://doi.org/10.1016/j.elerap.2019.100854>

Steinhauser, K., Leist, F., Maier, K., Michel, V., Pärsch, N., Rigley, P., ... Steinhauser, M. (2018). Effects of emotions on driving behavior. *Transportation Research Part F: Traffic Psychology and Behaviour*, 59, 150–163. <https://doi.org/10.1016/j.trf.2018.08.012>

Tan, H. H., Foo, M. D., & Kwek, M. H. (2004). The effects of customer personality traits on the display of positive emotions. *Academy of Management Journal*, 47(2), 287–296. <https://doi.org/10.5465/20159579>

Templier, M., & Paré, G. (2015). A framework for guiding and evaluating literature reviews. *Communications of the Association for Information Systems*, 37(1), 6. <https://doi.org/10.17705/1CAIS.03706>

Xiao, Y., & Watson, M. (2019). Guidance on conducting a systematic literature review. *Journal of Planning Education and Research*, 39(1), 93–112. <https://doi.org/10.1177/0739456X17723971>.

Zong, W., Zhang, J., & Jiang, Y. (2019). Long-term changes in Japanese young people's car ownership and usage from an expenditure perspective. *Transportation Research Part D: Transport and Environment*, 75, 23–41. <https://doi.org/10.1016/j.trd.2019.08.013>

## Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).