



Optimization of Intelligent Shopping Guide System of New Retail Fresh Supermarket Based on TAM Model: A Case Study in China Under COVID-19

Yonglin Dai¹, Wenjun Xv², Yimin Wang¹, Jia Liu¹, and Anthony Kong³(✉)

¹ School of Design, The Hong Kong Polytechnic University, Kowloon 999077, Hong Kong, China

² Yunnan University Secondary School, Kunming, China

³ School of Design, The Hong Kong Polytechnic University, 11 Yuk Choi Rd, Hung Hom, Kowloon, Hong Kong 999077, China

anthony-pui-keung.kong@polyu.edu.hk

Abstract. New retail fresh supermarket is an emerging supermarket service model in recent years, consumer behaviour is its focused problem. Affected by the COVID-19, panic buying of fresh food has become common, food waste and consumer dissatisfaction increased. In addition, many design deficiencies also influence consumer gratification with fresh supermarkets. Thus, this study explored the consumer psychology through questionnaires to ascertain the pain points of consumers, establish a model of ideal supermarket intelligent shopping guide systems based on the data analysis of 733 valid samples. The results show that (1) intelligent recommendation, product information and position search are essential to behavioural intention, (2) technical support affects consumer attitudes through the mediating effect of Compatibility and perceived ease of use, and ultimately affects users' behavioral intentions, (3) perceived usefulness and perceived ease of use are mediate factors of the optimization of guide system with user's attitude and behavioral intention.

Keywords: New Retail · COVID-19 · Raw Food Supermarket · Shopping Behavior · Intelligent Shopping Guidance System

1 Introduction

Consumers' perceptions and demands for consumer pursuits are no longer focused on price alone, but gradually extended to other diversified, higher-order, and holistic attributes, especially physical space and experience (Helm, Kim, S. H., & Van Riper, 2020). Amazon in the United States and Alibaba's Fresh Hema in China are the most advanced new retail supermarkets in the world, which have pioneered the transformation of traditional supermarkets (Fannin, 2018). Ma proposes an operational concept that

W. Xv—Assistant Professor.

© The Author(s) 2023

K. Hemachandran et al. (Eds.): ICAID 2023, AHIS 9, pp. 491–501, 2023.

https://doi.org/10.2991/978-94-6463-222-4_53

deeply integrates “online + offline” retail resources and empowers and upgrades traditional supply chain processes, such as design, manufacturing, marketing, and advocates the implantation of this innovative model in the market (Du & Jiang, 2017). Specifically, New Retail has four major features: channel integration, digitalization of operation, store intelligence and personalization of products, provides a broader and precise operation strategy for major stakeholders, reduces space and time costs, expands various potential consumption behaviours and motivations of users, and achieves a more profound and efficient consumer model innovation.

However, most of the present research is focusing on the macroeconomic model, innovation and entrepreneurship, and few studies on the applicability of interactive technologies to a specific field, especially taking the impact and changes caused by COVID-19 into account. Therefore, this paper will take fresh food supermarkets as the starting point to further dismantle and deepen the feasibility and design criteria of the content and strategy of intelligent shopping guide system from multiple perspectives, so as to provide more insights into the new retail research field.

2 The Fresh New Retail and Shopping Guidance System (FNRSSS)

2.1 The Need for FNRSSS for Fresh Food Retailing

Fresh produce new retail focuses on the integration of multiple food-derived service models, particularly for shopping + dining, while complex and diverse service segments require even more intelligent systems to support them when they are integrated. As major fresh food retail companies have practiced their new technologies to a certain extent, they are trying to integrate AI, IoT, SaaS services, multimodal recognition, and other forward-looking contents in the production, marketing, and consumption processes and reach the expansion and innovation of consumption scenarios, emphasizing self-service, experience, and unmanned supermarkets with senseless payment and intelligent storage. Therefore, there is an urgent need for a shopping guide system that focuses on service cues, touchpoints, and stories, helping users, retailers and other multi-stakeholders to solve their pain points, and enhancing the service attributes from the front and back end.

The integration of emerging digital technologies into the front-end of physical supermarket services has been favored by major retail employers since the beginning of computer application development and has been used in real business practices, including fast checkout platforms, pathway fresh food section navigation, store layout and supermarket business inquiries (Kalnikaite et al., 2013). Most of the current software also has incorporated recommendation systems, secure payments, etc. into the component design (Lawrence et al., 2001). Nonetheless, there is a lack of sufficient multi-dimensional and large-scale convergence in the new retail space to form technologies suitable for use in new retail shops (Roussos & Moussouri, 2004; Teece, 2018). From the back-end perspective, fresh produce smart shopping guide platforms can provide more accurate digital control of all aspects of the supply chain, ensure long-term and stable service quality output. Most new fresh produce retailers do not have further standardized planning and design of products or services, which leads to poor distribution and excessive cost losses.

2.2 FNRSSS Technology Implementation with a Focus on Theory

Any new technology needs to be conceptualized and laid out at a theoretical level, this study adopt TAM as the theoretical root. The Technology Acceptance Model (TAM) was first proposed by Fred D. Davis, that willingness to use depends on the individual's perceived usefulness and convenience (Davis, Bagozzi, & Warshaw, 1989), which elucidates the determinants of new technology acceptance and provides a more comprehensive explanation of the process of consumer (Venkatesh, V., 2000).

However, current related research is inadequate. First, FNRSSS, as a disruptive and innovative system, it will awaken higher user adoption intentions and engagement than traditional retail information systems (Arts et al., 2011). Second, according to relevant research, perceived ease of use and usefulness can be greatly influenced by technology (BNGai et al., 2007), technical support elements are essential. Also, users' trust in the system is influenced by the perceived usefulness and convenience of the smart shopping guide system and indirectly users' purchasing behaviour. Nevertheless, as of yet, what factors influence usefulness and convenience have not been determined. Third, new retailing has more complex emerging content and variable attributes, the more specific and disorganized consumer motivation to shop in the raw food supermarket in the context of the new epidemic indirectly has a significant impact on purchase intentions, while the traditional TAM model does not address the dynamic changes of the environment to be fully applicable (Barman et al., 2021). Therefore, based on TAM, this study aims to fill the missing breadth and depth of FNRSSS-related research at the theoretical level.

3 Research Question, Hypothesis

In conjunction with the literature review, based on the TAM model, the authors developed a consumer acceptance model for the supermarket smart shopping guide system (shown in Fig. 1). The model identifies several items as predictors of user acceptance of this new technology. The definitions and interrelationships of the factors in the study model are discussed.

3.1 Attitude Towards Adoption and Compatibility

The TAM model suggests that the determinant of intention to use is attitude (Davis et al., 1989). Attitudes are evaluations and opinions of good or bad behaviour (Verma & Sinha, 2018). The formation of intention to use depends on attitudes. Negative evaluations reduce the willingness to produce the behaviour (Groß, 2018). Individuals who have a high opinion of an intelligent shopping guide system will actively try to use. Compatibility is the degree of perceived alignment of a new technology with personal values, experiences, and needs (Ozturk et al., 2016). It consists of the perception of whether a technology is suitable for personal needs and lifestyle (Jaklič et al., 2018). Therefore, a high level of perceived compatibility with individual needs and lifestyles will accelerate their adaptation to new technologies (Schmidhuber et al., 2018). This will eventually influence their attitudes and behavioural intentions. Thus, the author proposes the following research hypotheses: H1: Attitudes towards adoption has a favourable impact on desire to use. H2: Compatibility has a favourable impact on attitudes about adoption.

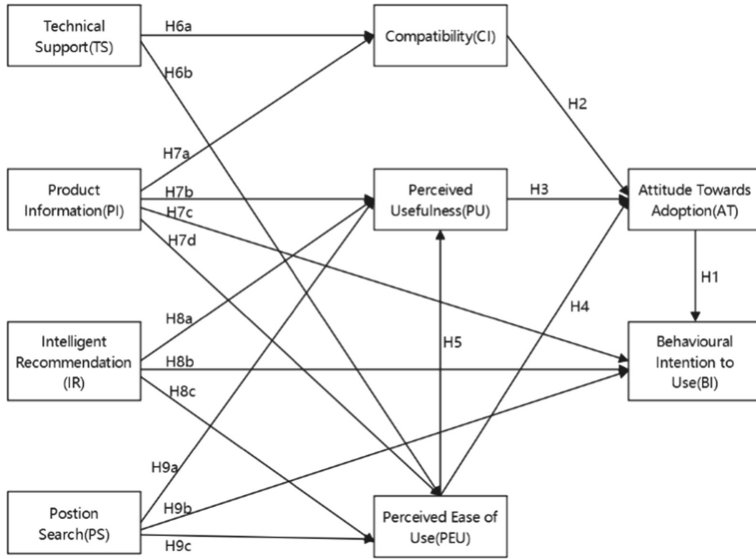


Fig. 1. Research-related models

3.2 Perceived Usefulness and Ease of Use

Davis et al. proposed that the perceived usefulness and ease of use of new technologies influence attitudes (Davis et al., 1989). Perceived usefulness is the factor by which users judge the extent to which a particular system can improve their work. Convenience is a factor by which users assume how much effort is required of them to master a particular technology, and users’ willingness to use technology becomes stronger when they perceive it to be effective and convenient in improving their work performance (Davis et al., 1989). Furthermore, if technology is easy to use, people will perceive it as more useful. To put it another way, perceived ease of use affects perceived usefulness (Gu et al., 2009). Thus, the authors proposes the following research hypotheses: H3: Users’ perceived usefulness has a favourable impact on the attitude to adoption. H4: Users’ perceived ease of use has a favourable impact on the attitude towards adoption. H5: Users’ perceived ease of use has a favourable impact on perceived usefulness.

3.3 Technical Support

The rapid development of technology has significantly changed the way supermarkets provide services to consumers (Cebeci et al., 2020). Consumers’ perceptions of the technological support will influence the extent to which they perceive new technologies to be in line with their personal needs, i.e., compatibility. This technical support offers protection of customer privacy, updating of information, responsiveness to operations, etc., which in turn will affect the perceived ease of use. Thus, the relevant research hypothesis was formulated: H6a: Technical Support has a favourable impact on Compatibility. H6b: Technological support has a favourable impact on users’ perceived ease of use.

3.4 Product Information

When individuals are confronted with new technology, they will judge whether to adopt it or not based on the perception of whether it fits their needs, lifestyle, and experience (Cheng, 2015). The product information provided by supermarkets will bridge the information gap between producers and consumers (Jordan et al., 2004). Product specific information such as price, sales volume, origin, calorie content, freshness, population, and storage time are very important to consumers, especially during COVID-19 when the panic psychology among consumers is serious. Thus, the authors proposes the following research hypotheses: H7a: Compatibility is positively influenced by product information. H7b: Product Information has a favourable impact on users' perceived usefulness. H7c: Product Information has a favourable impact on the behavioural intention to use. H7d: Product Information has a favourable impact on users' perceived ease of use.

3.5 Intelligent Recommendation

Rapid global economic growth and an increase in per capita income have led to a greater desire for convenience and less time to prepare meals at home (Vijaykumar et al., 2013). In terms of smart systems as self-service technology, timesaving is also one of the main benefits that users can see (Meuter et al., 2003). Intelligent recommendations, which provide integrated services through household purchase volume calculations, personalized recommendations, combination and matching to meet the needs of the consumers. Thus, the relevant research hypothesis was formulated: H8a: Intelligent Recommendation has a favourable impact on users' perceived usefulness. H8b: Intelligent Recommendation has a favourable impact on the behavioural intention to act. H8c: Intelligent Recommendation has a favourable impact on users' perceived ease of use.

3.6 Position Search

As known from the previous section, technology needs to be compatible with the lifestyle of the individual. Therefore, in response to the potential pain points of consumers when shopping in supermarkets, the authors also proposes the idea of an addressable function, which includes a series of designs such as the positioning of products on the shelves, the design of the layout of each area of the supermarket, and the positioning function of the companion location (Jalilvand & Samiei, 2012). Such services may affect the associated perceived usefulness and convenience. Thus, the relevant research hypothesis was formulated: H9a: Position Search has a favourable impact on users' perceived usefulness. H9b: Position Search has a favourable impact on the behavioural intention to act. H9c: Position Search has a favourable impact on users' perceived ease of use.

4 Research Methods

For the structure of the measurement model, considering the nature of intelligent systems, the research model consisted of nine items (Product Information, Intelligent Recommendation, Position Search, Support of Technology, Compatibility, Perceived Usefulness,

Perceived ease of use, Attitude Towards Adoption, and Intentional Behaviour Towards Use). To obtain clear attitudes and acceptance from users, a 6-point Likert scale was used to score them. Respondents rated various ideas about the smart shopping system on a scale of 0–6, representing “Fully disagree, do not agree, partly disagree, partly agree, agreement and full agreement”. The target participants of this project were supermarket shoppers. The authors distributed questionnaires on WeChat, Xiaohongshu and other social media, and then collected data between February and April 2022. After excluding individual anomalous samples that filled in too short a time or exactly the same answers, a total of 733 valid questionnaires were obtained. All participants were from China, with women accounting for about two-thirds of the population, and the participants were mostly young and middle-aged people from large cities.

5 Analysis and Results of Data

The authors used SPSS 26.0 and AMOS 26.0 to analyze the data collected. It follows a two process (Anderson & Gerbing, 1988). Firstly, the authors determined applicability and effectiveness by judging reliability, the goodness of fit, convergent validity, and discriminant validity. The authors judge interactions between the hypothetical items and their magnitude by examining the relevant structural models.

5.1 Reliability and Validity Analysis

They were evaluated to determine the credibility and validity of the associated hypothesis models. All the values of Cronbach's α are from of 0.866 to 0.937, it demonstrates a high level of internal consistency reliability of the questionnaire. In contrast, convergent validity is measured by item factor loadings (k), CR and AVE. The (k), for all variables were significant at over 0.6. The composite reliability (CR) for all variables was in the range of 0.866 to 0.936. The AVE values were also exceeded 0.50 with all coefficients exceeded the specified thresholds, indicating that the internal consistency of the variables in the model was high, thus indicating that the items in the questionnaire were reliable for the hypothesized model. The items in this questionnaire are reliable for the hypothesized model.

The discriminant validity test requires that the measure does not reflect other variables. The square root of the mean variance value has to exceed the correlation between the construct and the other constructs. The square root is always greater than the degree of correlation, that indicates that all variables have some degree of discriminant validity.

Structural validity is a measure of the degree of fit and requires that the coefficients meet the relevant requirements. The authors assessed the following indices. The GFI (Goodness-of-fit index) value was 0.938, the RMSEA (Root Mean Square Error of Approximation) value was 0.032 and the CFI (Comparative fit index) value was 0.981. These resultant values were all at standard levels and the model was close to a good fit. This suggests hypothetical fits well with the data collected.

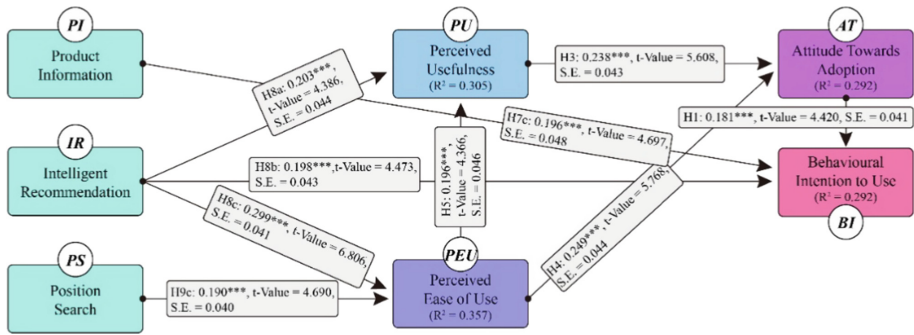


Fig. 2. SEM result.

5.2 Hypothesis Test

Each of the 17 hypotheses mentioned above was tested using SEM. The associated R-squared and paths demonstrate the degree of support for the hypothesis model presented by the relevant data. The R^2 and path coefficients show in Fig. 2 clearly reflect the existence of the certain influence relationship between the variables. According to Cohen (1998), $R^2 (\geq 0.01)$ has small explanatory power, $R^2 (\geq 0.09)$ has medium explanatory power, and $R^2 (\geq 0.25)$ has strong explanatory power. In this model, the R-squared of compatibility, perceived usefulness, perceived ease of use, attitude towards adoption, and behavioural intent of use ranged from 0.265 to 0.357, which can indicate the explanatory power is high.

It is worth noting that the R^2 of product information to compatibility is 0.379, which means that product information explains 37.9% of the variance of the compatibility variable. In addition, intelligent recommendation also a high effect on perceived ease of use at 29.9%. Product information, intelligent recommendation and addressability have an impact on users' attitudes and intentions to use, not only through the mediating effects of perceived ease of use and perceived usefulness. And they also influence users' intention to use.

5.3 Questionnaire Other Information

The questionnaire asked consumers preference for the form of smart shopping guide system and found that most chose the smart shopping cart (37.0%), followed by the cell phone app (28.8%), and then the smart shopping guide screen, while the least chose the smart robot (11.4%). An open-ended question also set up to ask about consumers needs and ideas for the shopping guide system and found that many users mentioned the personalized services (e.g., providing special services for elderly users, disabled and children), as well as some specific services like bluetooth connection, companionship service, human guide calling service and intelligent delivery.

Customers also show strong interest in product information (e.g., price ranking of similar products, allergen information, discount information, news about food safety), intelligent recommendations (seasonal ingredients, shopping plan recommendations), position search (product location, navigation guidance, intelligent planning of shopping

routes), which are corresponding to the hypothetical model factors. Some customers also mentioned the requirements for technical support, such as preventing automatic exit and protect privacy. Considering convenience and avoid touch under COVID-19, some users want to enjoy intelligent service like automatic weighing, self-checkout function and face payment service.

In general, customers' acceptance and demand for technological innovation is high, the supermarket intelligent shopping guide system has strong practical application value, and there is more room for improvement in supermarket services.

6 Discussion and Summary

6.1 Significant Discoveries

This paper is a contribution to the literature on new retailing by examining the factors that influence the acceptance of supermarket intelligent shopping guide systems and providing both theoretical and practical contributions.

In terms of theory building, this study incorporates technical support, product information, intelligent recommendations, position search, and compatibility into the original TAM model, to examine the determinants of supermarket consumers' acceptance of adopting an intelligent shopping guide system through empirical analysis, uncovers the consumer expectations for new retail supermarkets during COVID-19 and what supermarkets can do in the future to design a better experience for their users. In all, considering the complicated and changeable consumer psychology, the model assumptions are comprehensive and valuable.

In terms of practical implications, the study proposes the following thoughts for the optimization of user experience in new retail supermarkets: first of all, understand the needs and lifestyles of consumers, so as to offer personalized services; meanwhile, focus on the value of technology and provide technical support such as timely updating of systems and information. Besides, offer a series of contents that are of interest to them, such as price, sales volume, origin, applicable population, storable time, location information, etc., which to help customers make purchase decisions. Last but not least, integrating information and services, such as the comparison of the same type of products, and recipes match. A variety of integrated services can help save users' time and make them have a better experience.

6.2 Limitations and Prospects

Since using a random sample of users from China, the results of this study may be limited to some extent for the applicable country. Another limitation of this paper is that this study is based on the author's assumptions about the functioning of intelligent systems. What other factors may influence people's willingness to use them and the extent to which behavioural intentions can be used to predict future behaviour are unknown. Moreover, the world is in a rapidly changing technological environment. Evidence needs to be collected if the relevant variable relationships between technical acceptance are to be examined. Tracking individuals' behaviours before and after they adopt a supermarket

smart shopping guide system to gain a fuller understanding of behavioural patterns, key factors and how these factors change over time. Longitudinal research designs are therefore a potential avenue for future research.

References

- Ajzen, I. (1991). The theory of planned behavior. *Organizational behavior and human decision processes*, 50(2), 179-211.
- Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin*, 103(3), 411-423. <https://doi.org/10.1037/0033-2909.103.3.411>
- Arts, J. W., Frambach, R. T., & Bijmolt, T. H. (2011). Generalizations on consumer innovation adoption: A meta-analysis on drivers of intention and behavior. *International Journal of Research in Marketing*, 28(2), 134-144.
- Athey, S., & Ellison, G. (2011). Position auctions with consumer search. *The Quarterly Journal of Economics*, 126(3), 1213-1270.
- Barman, A., Das, R., & De, P. K. (2021). Impact of COVID-19 in food supply chain: Disruptions and recovery strategy. *Current Research in Behavioral Sciences*, 2, 100017.
- Caswell, J. A., & Padberg, D. I. (1992). Toward a more comprehensive theory of food labels. *American Journal of Agricultural Economics*, 74(2), 460-468. <https://doi.org/10.2307/1242500>
- Cebeci, U., Ertug, A., & Turkcan, H. (2020). Exploring the determinants of intention to use self-checkout systems in Super Market chain and its Application. *Management Science Letters*, 1027-1036. <https://doi.org/10.5267/j.msl.2019.11.007>
- Chang, T. Z., & Wildt, A. R. (1994). Price, product information, and purchase intention: An empirical study. *Journal of the Academy of Marketing science*, 22(1), 16-27.
- Cheng, Y. M. (2015). Towards an understanding of the factors affecting m-learning acceptance: Roles of technological characteristics and compatibility. *Asia Pacific Management Review*, 20(3), 109-119.
- Chen Xilin. (2018). Analysis of fresh supermarket operation mode under the new retail background (Master's Thesis, Nanjing University).
- Cho, Y. C., & Sagynov, E. (2015). Exploring factors that affect usefulness, ease of use, trust, and purchase intention in the online environment. *International journal of management & information systems*, 19(1), 21-36.
- Cohen, P. N. (1998). Black concentration effects on black-white and gender inequality: Multilevel analysis for US metropolitan areas. *Social Forces*, 77(1), 207-229.
- Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User acceptance of computer technology: A comparison of two theoretical models. *Management Science*, 35(8), 982-1003. <https://doi.org/10.1287/mnsc.35.8.982>
- Du Ruiyun, Jiang Kan. (2017). New retail: connotation, development motivation and key issues. *Price Theory and Practice*, (2), 139-141.
- Fannin, R. (2018). Alibaba beats amazon to new all-digital retail trend. *Forbes*. Retrieved from <https://www.forbes.com/sites/rebeccafannin/2018/09/21/alibaba-beats-amazon-to-newall-digital-retail-trend/#7eeb03346653>
- Goodhue, D. L., & Thompson, R. L. (1995). Task-technology fit and individual performance. *MIS quarterly*, 213-236.
- Groß, M. (2018). Heterogeneity in consumers' mobile shopping acceptance: A finite mixture partial least squares modelling approach for exploring and characterising different shopper segments. *Journal of Retailing and Consumer Services*, 40, 8-18.

- Gross, H. M., Boehme, H., Schroeter, C., Müller, S., König, A., Einhorn, E., ... & Bley, A. (2009, October). TOOMAS: interactive shopping guide robots in everyday use-final implementation and experiences from long-term field trials. In 2009 IEEE/RSJ International Conference on Intelligent Robots and Systems (pp. 2005–2012). IEEE.
- Gu, J. C., Lee, S. C., & Suh, Y. H. (2009). Determinants of behavioral intention to mobile banking. *Expert Systems with Applications*, 36(9), 11605-11616.
- Helm, S., Kim, S. H., & Van Riper, S. (2020). Navigating the ‘retail apocalypse’: A framework of consumer evaluations of the new retail landscape. *Journal of Retailing and Consumer Services*, 54, 101683. <https://doi.org/https://doi.org/10.1016/j.jretconser.2018.09.015>
- Jaklič, J., Grublješič, T., & Popovič, A. (2018). The role of compatibility in predicting business intelligence and analytics use intentions. *International Journal of Information Management*, 43, 305-318.
- Jalilvand, M. R., & Samiei, N. (2012). The effect of electronic word of mouth on brand image and purchase intention: An empirical study in the automobile industry in Iran. *Marketing Intelligence & Planning*.
- Jordan Lin, C.-T., Lee, J.-Y., & Yen, S. T. (2004). Do dietary intakes affect search for nutrient information on food labels? *Social Science & Medicine*, 59(9), 1955–1967. <https://doi.org/https://doi.org/10.1016/j.socscimed.2004.02.030>
- Kalnikaite, V., Bird, J., & Rogers, Y. (2013). Decision-making in the aisles: informing, overwhelming or nudging supermarket shoppers?. *Personal & Ubiquitous Computing*, 17(6), 1247-1259.
- Khalifa, M., & Liu, V. (2007). Online consumer retention: contingent effects of online shopping habit and online shopping experience. *European Journal of Information Systems*, 16(6), 780-792.
- Krulwich, B. (1997). Lifestyle finder: Intelligent user profiling using large-scale demographic data. *AI magazine*, 18(2), 37-37.
- Lawrence, R. D., Almasi, G. S., Kotlyar, V., Viveros, M., & Duri, S. S. (2001). Personalization of supermarket product recommendations. In *Applications of data mining to electronic commerce* (pp. 11–32). Springer, Boston, MA.
- Madden, T. J., Ellen, P. S., & Ajzen, I. (1992). A comparison of the theory of planned behavior and the theory of reasoned action. *Personality and social psychology Bulletin*, 18(1), 3-9.
- Meuter, M. L., Ostrom, A. L., Bitner, M. J., & Roundtree, R. (2003). The influence of technology anxiety on consumer use and experiences with self-service technologies. *Journal of Business Research*, 56(11), 899-906.
- Ngai, E. W., Poon, J. K. L., & Chan, Y. H. (2007). Empirical examination of the adoption of WebCT using TAM. *Computers & Education*, 48(2), 250-267.
- Ozturk, A. B., Bilgihan, A., Nusair, K., & Okumus, F. (2016). What keeps the mobile hotel booking users loyal? Investigating the roles of self-efficacy, compatibility, perceived ease of use, and perceived convenience. *International Journal of Information Management*, 36(6), 1350-1359.
- Roussos, G., & Moussouri, T. (2004). Consumer perceptions of privacy, security and trust in ubiquitous commerce. *Personal and Ubiquitous Computing*, 8(6), 416-429.
- Teece, D. J. (2018). Business models and dynamic capabilities. *Long range planning*, 51(1), 40-49.
- Schmidhuber, L., Maresch, D., & Ginner, M. (2018). Disruptive technologies and abundance in the service sector-toward a refined technology acceptance model. *Technological Forecasting and Social Change*.
- Venkatesh, V. (2000). Determinants of perceived ease of use: Integrating control, intrinsic motivation, and emotion into the technology acceptance model. *Information systems research*, 11(4), 342-365.
- Verma, P., & Sinha, N. (2018). Integrating perceived economic wellbeing to technology acceptance model: The case of mobile based agricultural extension service. *Technological Forecasting and Social Change*, 126, 207-216.

- Vijayasathy, L. R. (2004). Predicting consumer intentions to use on-line shopping: The case for an augmented technology acceptance model. *Information & Management*, 41(6), 747–762. <https://doi.org/https://doi.org/10.1016/j.im.2003.08.011>
- Vijaykumar, S., Lwin, M. O., Chao, J., & Au, C. (2013). Determinants of Food Label Use Among Supermarket Shoppers: A Singaporean perspective. *Journal of Nutrition Education and Behavior*, 45(3), 204–212. <https://doi.org/https://doi.org/10.1016/j.jneb.2012.09.001>
- Wang, S., & Zhang, Y. (2005). The new retail economy of Shanghai. *Growth and Change*, 36(1), 41-73.

Open Access This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

