

## DESIGN, DEVELOP, AND IMPLEMENT AN EXPERIENTIAL TEA BLENDING PROGRAM FOR VISUALLY IMPAIRED PEOPLE

<sup>a</sup>Thitima Wongsheree, <sup>b</sup>Nanthana Boonla-or, <sup>c</sup>Aussama Soontrunnarudrungsri,  
<sup>d</sup>Piyaporn Chueamchaitrakund, <sup>e</sup>Chanisa Tanavesaratchakule, <sup>f</sup>Kamonpan Sapmake

### ABSTRACT

**Objective:** The objective of this study is to investigate Design, Develop, and Implement an Experiential Tea Blending Program for Visually Impaired People, with the aim of [enhance the income generation capabilities of the Sensory Intelligence Group; SIG, a visually impaired independent occupation club.

**Theoretical Framework:** In this topic, the main concepts and theories that underpin the research are presented. Blended Learning design (Carman, 2002) and the 5E Experience Model (Keeley, 1994) stand out, providing a solid basis for understanding the context of the investigation.

**Method:** The methodology adopted for this research comprises by fostering entrepreneurial skills, developing new tea products, and designing engaging customer experiences, the project seeks to empower the SIG members. Data collection was carried out through Pre- and post-tests for measuring knowledge in a training course, observations the member participation in the tea blending workshop and the participants feedback.

**Results and Discussion:** The results obtained revealed the blend learning design could apply to visullay impaired people new tea blending products and service design skills to create memorable customer experiences. One of the key factors contributing to the program's success was the collaborative approach adopted. By fostering partnerships between various organizations and experts, the program was able to provide participants with a comprehensive range of support and resources.

**Research Implications:** These implications could reduce inequality and empowering the people with disabilities by multidisciplinary network supported to establish sustainable and profitable ventures, contributing to their financial independence and overall well-being.

<sup>a</sup> PhD in Posthavest Technology, King Mongut's University of Technology Thonburi (KMUTT), Bangkok, Thailand. E-mail: thitima.won@gmail.

<sup>b</sup> Master in Textiles, King Mongut's University of Technology Thonburi (KMUTT), Bangkok, Thailand. E-mail: nanthana.kul@gmail.com

<sup>c</sup> PhD in Human Nutrition Empasis in Sensory Analysis and Consumer Behavior, Faculty of Agro-Industry, Kasetsart University, Bangkok, Thailand. E-mail: aussuma.s@ku.th

<sup>d</sup> PhD in Agro-Industrail Product Delvelopment, Tea and Coffee Institute, Mae Fah Luang University (MFU), Chaing Rai, Thailand. E-mail: npiyaporn.chu@mfu.ac.th

<sup>e</sup> Bachelor of Science in Industrial Education, Technology Education, King Mongut's University of Technology Thonburi (KMUTT), Bangkok, Thailand. E-mail: chanisa.tan@kmutt.ac.th

<sup>f</sup> Bachelor of Business Administration, King Mongut's University of Technology Thonburi (KMUTT), Bangkok, Thailand. E-mail: kamonpan.sap@gmail.com



**Originality/Value:** The relevance and value of this research are evidenced by creating a memorable customer experience, incorporating elements of sensory engagement and storytelling.

**Keywords:** visually impaired, experience design, tea blending, sensory workshop.

**Received:** 10/18/2024

**Accepted:** 12/20/2024

**DOI:** <https://doi.org/10.55908/sdgs.v13i2.4214>

## PROJETAR, DESENVOLVER E IMPLEMENTAR UM PROGRAMA EXPERIENCIAL DE MISTURA DE CHÁS PARA PESSOAS COM DEFICIÊNCIA VITAL

### RESUMO

**Objetivo:** O objetivo deste estudo é investigar o Design, Desenvolver e Implementar um Programa de Mistura de Chás Experimentais para Pessoas com Deficiência Visual, com o objetivo de [aumentar as capacidades de geração de renda do Sensory Intelligence Group; SIG, um clube de ocupação independente para deficientes visuais.

**Estrutura Teórica:** Neste tópico, são apresentados os principais conceitos e teorias que sustentam a pesquisa. O design de Aprendizagem Combinada (Carman, 2002) e o Modelo de Experiência 5E (Keeley, 1994) se destacam, fornecendo uma base sólida para a compreensão do contexto da investigação.

**Método:** A metodologia adotada para esta pesquisa compreende o fomento de habilidades empreendedoras, o desenvolvimento de novos produtos de chá e o design de experiências envolventes para o cliente, o projeto busca capacitar os membros do SIG. A coleta de dados foi realizada por meio de pré e pós-testes para medir o conhecimento em um curso de treinamento, observações da participação dos membros no workshop de mistura de chás e o feedback dos participantes.

**Resultados e Discussão:** Os resultados obtidos revelaram que o design de aprendizagem combinada poderia aplicar a pessoas com deficiência visual novos produtos de mistura de chá e habilidades de design de serviço para criar experiências memoráveis para o cliente. Um dos principais fatores que contribuíram para o sucesso do programa foi a abordagem colaborativa adotada. Ao promover parcerias entre várias organizações e especialistas, o programa foi capaz de fornecer aos participantes uma gama abrangente de suporte e recursos.

**Implicações da Pesquisa:** Essas implicações poderiam reduzir a desigualdade e capacitar as pessoas com deficiência por meio de uma rede multidisciplinar apoiada para estabelecer empreendimentos sustentáveis e lucrativos, contribuindo para sua independência financeira e bem-estar geral.

**Originalidade/Valor:** A relevância e o valor desta pesquisa são evidenciados pela criação de uma experiência memorável para o cliente, incorporando elementos de engajamento sensorial e narrativa.

**Palavras-chave:** deficientes visuais, design de experiência, mistura de chá, oficina sensorial.



## DISEÑAR, DESARROLLAR E IMPLEMENTAR UN PROGRAMA EXPERIENCIAL DE MEZCLA DE TÉ PARA PERSONAS CON DISCAPACIDAD VISUAL

### RESUMEN

**Objetivo:** El objetivo de este estudio es investigar el diseño, desarrollo e implementación de un programa de mezcla de té experiencial para personas con discapacidad visual, con el objetivo de [mejorar las capacidades de generación de ingresos del Grupo de Inteligencia Sensorial; SIG, un club de ocupación independiente para personas con discapacidad visual.

**Marco teórico:** En este tema, se presentan los principales conceptos y teorías que sustentan la investigación. Se destacan el diseño de aprendizaje combinado (Carman, 2002) y el modelo de experiencia 5E (Keeley, 1994), que brindan una base sólida para comprender el contexto de la investigación.

**Método:** La metodología adoptada para esta investigación comprende el fomento de habilidades empresariales, el desarrollo de nuevos productos de té y el diseño de experiencias atractivas para el cliente, el proyecto busca empoderar a los miembros del SIG. La recopilación de datos se llevó a cabo a través de pruebas previas y posteriores para medir el conocimiento en un curso de capacitación, observaciones de la participación de los miembros en el taller de mezcla de té y la retroalimentación de los participantes.

**Resultados y discusión:** Los resultados obtenidos revelaron que el diseño de aprendizaje combinado podría aplicarse a las personas con discapacidad visual para desarrollar nuevos productos de mezcla de té y habilidades de diseño de servicios para crear experiencias memorables para el cliente. Uno de los factores clave que contribuyeron al éxito del programa fue el enfoque colaborativo adoptado. Al fomentar las asociaciones entre varias organizaciones y expertos, el programa pudo brindar a los participantes una amplia gama de apoyo y recursos.

**Implicaciones de la investigación:** Estas implicaciones podrían reducir la desigualdad y empoderar a las personas con discapacidad mediante una red multidisciplinaria apoyada para establecer emprendimientos sostenibles y rentables, contribuyendo a su independencia financiera y bienestar general.

**Originalidad/Valor:** La relevancia y el valor de esta investigación se evidencian al crear una experiencia memorable para el cliente, incorporando elementos de participación sensorial y narración de historias.

**Palabras clave:** personas con discapacidad visual, diseño de experiencias, mezcla de té, taller sensorial.

### 1 INTRODUCTION

Tea Masterclass or tea sommelier program have created for special experiences, the workshop program was worldwide with variated duration time from 2-hours to 4 Days depend on objective and training scope. In the past, there was a report shown the blind persons have better sense of smell than normal sight people (Schwenn O. *et al*, 2002). Later, Thanaporn K. *et al*. (2017) revealed the VI assessors gave more order characteristic



words than another one (Regular eyesight (RE) assessors) and they were able to group cooked rice, which had the same color together even they only used the smell sense. VI trained panelist had higher efficiency in rapid profiling test (sorting task) compare comparatively with RE panel. Moreover, they were able to tell the different between coconut sugar sample by the sweetness and sourness of the product (Wongsheree *et al*, 2017). However, it has never been reported in Tea Blending Program or Training Crouse for the visually impaired (VI) people. The demand for herbal tea market has increased as a result of growing awareness of preventative medicine and holistic health. Furthermore, tea blending program consists in whole value chain from tea farm to table that could engagement the VI trained panelist to create the new product and service design which product value added for freelance as the visually impaired member in name Sensory Intelligence Group.

## **2 THEORETICAL FRAMEWORK**

### **2.1 EXPERIMENTAL TEA BLENDING PROGRAM**

Blended Learning design composed with 5 principles of were apply for experiment include teaching with live event (hands on experiences), synchronous (coordinated time), self-paced learning (learn on their own or learn at their own pace), collaboration (cooperative learning by providing a learning environment in which students can communicate with others with performance support materials and teaching material, and assessment of the learning (Carman, 2002).

### **2.2 EXPERIENCE DESIGN**

Customer experience design includes optimizing every interaction that a customer has with the business to create positive and memorable experiences, both online and offline. It involves taking a holistic approach to the customer journey, considering every touchpoint from the initial discovery of your business all the way through to the point of purchase and beyond.

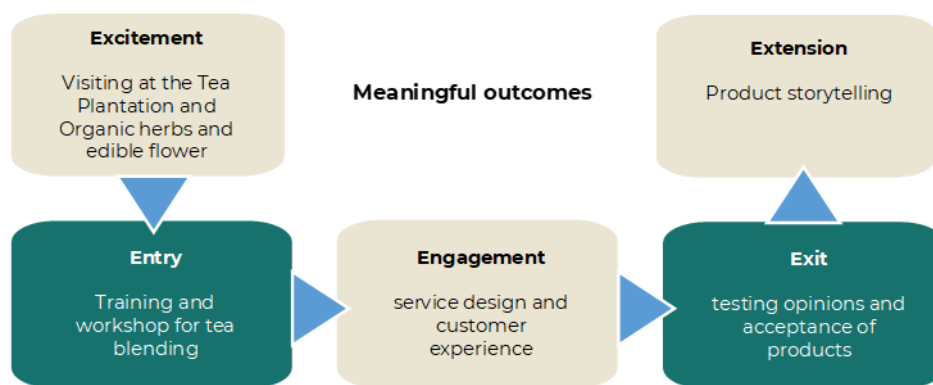
The experience design is based on the 5E model or Experience Design model (Keeley L., 1994) that can be used to design meaningful services, events, or learning



experiences. The 5E model is consists with excitement, entry, engagement, exit and extension. The critical step for communication with consumer is the first step for attracting the consumers awareness and accept the product value, also the last step in expansion affect in consumer memory and impression.

**Figure 1**

*The 5E Experience Model (Larry Keeley, 1994).*



### 3 METHODOLOGIES

#### 3.1 ENGAGEMENT OF VISUALLY IMPAIRED INDIVIDUALS IN DESIGNING TEA BLEND RECIPES

Fifteen visually impaired (VI) individuals participated in a comprehensive tea workshop. This workshop included a three-day field trip to a tea plantation, a processing factory, an organic herbal center, and special tea shops in both government and private sectors. Additionally, the workshop featured two days of basic tea training and a tea blending workshop. The lecture topics covered tea variety, production, processing, and sensory evaluation, with a focus on auditory media and practical sensory exercises, prepared by the tea specialists from the Tea and Coffee Institute of Mae Fah Luang University.

The VI trainees were divided into four groups and tasked with independently designing tea blend recipes. They explored a variety of raw materials, including dried herbs, spices, fruits, flowers, and other ingredients. Each sample was tested individually, both in its dried form and as brewed tea. The small group members then decided on the



best tea recipes for further testing and discussion at the Food Innopolis lab of the Tea and Coffee Institute, Mae Fah Luang University, Chiang Rai Province.

Evaluating the basic knowledge of tea by Pre-Test/Post-Test without control group design using paired-samples t-test at 95% confidence interval.

### 3.2 ONLINE TRAINING AND WORKSHOP FOR MARKETING AND BRAND CHARACTER CLASSIFICATION

A three-day online training session focused on the basics of marketing, followed by a two-day workshop aimed at classifying brand character for the Sensory Intelligence Group (SIG). The workshop utilized brainstorming techniques and included inspiring activities, such as experience sharing sessions with the owner of a renowned tea blending company and immersive service experiences at a premium teahouse.

Insights gained from these activities were employed in designing the consumer experience journey, incorporating tea tasting and storytelling elements. The emotional properties of the newly blended tea products were evaluated using Robert Plutchik's wheel of emotions (1980).

### 3.3 EXPERIENCE DESIGN

Customer experience design involves optimizing every interaction that a customer has with a business to create positive and memorable experiences, both online and offline. This approach takes a holistic view of the customer journey, considering every touchpoint from initial discovery through to the point of purchase and beyond.

## 4 RESULTS AND DISCUSSIONS

### 4.1 TEA RECIPE FORMULATION

The VI participants were separated to the small group, all members have participated and apply the knowledge for selecting the raw material in the tea recipe, storytelling writing and emotion descriptive during the workshop (Individual observed). The new tea blend percept was composed with various herb, flower, dry fruit, and special



spicy as vanilla bean. They also engaged in the entire tea production process, from cultivation to final consumption, ensuring a comprehensive understanding and appreciation of each stage. Previous research has shown that blind individuals possess a heightened sense of smell compared to those with normal sight (Schwenn O. *et al.*, 2002).

**Group Dynamics and Knowledge Application** - Participants were divided into small groups, facilitating active participation and collaboration. Each member contributed to selecting raw materials for the tea blend, developing storytelling narratives, and describing emotions associated with the tea tasting experience. This participatory approach allowed for a diverse range of inputs and creativity, leveraging the unique perspectives and sensory capabilities of the visually impaired (VI) participants.

**Observational Insights** - Throughout the workshop, individual observations highlighted the effectiveness of this immersive method. Participants demonstrated a deep understanding of the raw materials, including herbs, flowers, dried fruits, and special spices such as vanilla beans. This diverse selection was crucial in creating a unique and appealing tea blend. The VI participants' heightened sensory perception played a significant role in the meticulous selection and combination of ingredients, ensuring a balanced and harmonious flavor profile. Building on this, Thanaporn K. *et al.* (2017) found that VI assessors generated more descriptive characteristic words and effectively grouped similarly colored cooked rice using only their sense of smell. VI trained panelists demonstrated greater efficiency in rapid profiling tests (sorting tasks) compared to their regular eyesight (RE) counterparts.

**Sensory and Emotional Evaluation** - The new tea blend was subjected to a detailed sensory and emotional evaluation. The participants described the emotional responses elicited by the tea. This method provided a structured framework for capturing the complex emotional reactions associated with the sensory experience of the tea blend. The use of storytelling further enriched this process, allowing participants to convey their personal and emotional connections to the tea blend.

**Impact on Consumer Experience** - The comprehensive "from farm to table" approach not only enhanced the participants' understanding and skills but also had a significant impact on the consumer experience. The detailed attention to raw material selection and the incorporation of storytelling created a compelling and memorable product. Consumers were able to connect with the tea blend on a deeper level, appreciating not only the flavors but also the narrative and emotional context behind it.



The results of this study underscore the value of an immersive, participatory approach in tea blending workshops. By engaging VI participants in the entire process from raw material selection to storytelling and emotional description, we were able to create a unique and emotionally resonant tea blend. This approach highlights the potential for inclusive practices to enhance product development and consumer engagement in the tea industry.

**Figure 2**

*Visiting at the tea garden, organic herbal and flower ingredient farm and tea processing factories in Chiang Rai Province, Northern Thailand.*





**Figure 3**

*Training and workshop at the Tea and Coffee Institute, MFU and Wang Put Tan Tea Plantation.*



#### 4.2 ENTREPRENEURIAL SHORT COURSE FOCUSED ON TEA BUSINESS FOR VISUALLY IMPAIRED INDIVIDUALS

The entrepreneurial short course specifically focused on the tea business aimed to provide visually impaired (VI) individuals with the knowledge, skills, and real-world experiences necessary to succeed in the tea industry. The course integrated theoretical instruction with practical experiences, including visits to teahouses, to enhance participants' ability to create compelling experiences through their blended tea products.

**Participant Demographics and Engagement** - A cohort of 15 VI individuals, varying in age and prior entrepreneurial experience, participated in the course. The participants were engaged through a combination of online training sessions, hands-on workshops, and field trips to local teahouses. Assistive technologies and adapted learning materials were utilized to ensure accessibility and full participation.

**Theoretical Knowledge Acquisition** - The course covered essential topics such as the fundamentals of tea cultivation, processing, and blending, as well as business planning, marketing, and customer experience design. Pre- and post-course assessments demonstrated significant improvements in participants' understanding of these subjects.



The inclusion of sound-based learning materials and tactile experiences helped reinforce key concepts, particularly in tea sensory evaluation and blending techniques.

**Practical Experience and Field Visits** - One of the course's highlights was the series of visits to local teahouses. These visits allowed participants to observe and engage in the operational aspects of running a tea business, from sourcing and blending to customer service and marketing. Participants had the opportunity to interact with successful tea entrepreneurs, gaining insights into best practices and innovative approaches in the tea industry. Additionally, the visually impaired participants had the unique experience of participating in the Tea and Coffee Festival at Mae Fah Luang University (MFU), where they conducted market tests for their new blended tea products. This real-world exposure provided invaluable feedback and allowed participants to refine their products based on consumer preferences, further enhancing their practical understanding and confidence in their entrepreneurial abilities.

**Sensory Evaluation and Storytelling** - A key component of the course was the focus on sensory evaluation and storytelling. Participants learned to use their heightened sensory perceptions to create unique and memorable tea blends. They also developed storytelling skills to craft compelling narratives around their products, enhancing the overall consumer experience. The use of Robert Plutchik's wheel of emotions (1980) provided a structured method for describing the emotional responses elicited by their tea blends.

However, some challenges were encountered, such as varying levels of prior knowledge and the need for ongoing support. The course addressed these by offering personalized guidance and utilizing adaptive learning tools. Future iterations of the course could benefit from incorporating long-term mentorship programs to support participants as they launch and grow their businesses. The immediate outcomes of the course were positive, but long-term follow-up will be essential to assess sustained entrepreneurial success. Future courses should consider integrating continuous mentorship and networking opportunities to help participants navigate the early stages of their ventures. Additionally, expanding the course content to cover advanced business strategies and digital marketing could further enhance participants' capabilities.

The entrepreneurial short course focused on the tea business successfully equipped visually impaired individuals with the knowledge, skills, and experiences necessary to create unique tea blends and engaging customer experiences. The



combination of theoretical instruction, practical workshops, and real-world field visits proved effective in enhancing participants' entrepreneurial intentions and confidence. These findings underscore the potential of tailored educational programs to empower VI individuals in the tea industry and highlight the importance of ongoing support to maximize their success.

#### 4.3 CUSTOMER EXPERIENCE DESIGN WITH THE INPUT FROM AND INTERACTION OF THE VISUALLY IMPAIRED (VI)

From Tea Recipe Formulation session and Entrepreneurial Short Course, it comes a result in the form of Tea Blends consisting of 5 flavours: Sweet Dazzling, Rose Quartz, Mango Sticky Rice, Passion and Aquamarine. The blends are named after and sights, scents and stories of each tea blend. The analogy of weekdays energy is used to communicate the unique characteristics of each blend. In culture, colours are associated meaningfully with things around. Days in a week are matched with specific colours.

There were a set of auspicious colours matching guideline for royal-court-high-ranked ladies to wear daily. Contemporarily, Thais are familiar with daily colour codes as yellow representing Monday, pink for Tuesday, green for Wednesday, orange for Thursday, blue for Friday, violet for Saturday and red for Sunday.

The Visually Impaired (VI) in this programmer propose communicative strategy to present each blend as suitable for each day because of both its colours and level of energetic characters gained from each blend ingredients mixture. The following table display the relationship among sights, scents and stories of each blend.

Apart from the VI naming the blends, articulating the characteristics and strategizing the communication means, they also contribute their effort in conceptualizing the packaging design, another important touch point to entice customers' experience. The packaging is designed by graphic designer with the intention to proudly showcase the 5 different types of tea sachets in side. The external graphics of colours blending directly communicate of sighting experience, beautiful sophistication of the mixture (Figure 5).



**Figure 4**

*Coloured tea blend in the making.*



**Table 1**

*Tea blend and their association among their characteristics, represented colours and stories.*

Blends	Main Ingredients	Colours (Sights)	Characteristics of the Days (Scents and Stories)
<b>Sweet Dazzling</b>	Longang Freeze dry, vanilla bean	pale yellow	Starting the first day of the week gently. Zipping Sweet Dazzling resembles the experience of nibbling a little piece of sweet. It is truly an encouragement for the mind to actively get start.
<b>Rose Quartz</b>	Green tea, Mulberry freeze dry, Licorice, etc.	pale pink	Tuesday can be the day for work concentration. Spices in Rose Quartz help drinkers energize, while Herbs help them focus and calm. After long tiring meeting, Rose Quartz can also sooths their throats and their minds.
<b>Mango Sticky Rice</b>	Mango freeze dry, Assum tea, Coconut meat, etc.	no colour	It is Wednesday when all tasks rising to their peaks at mid-week. Familiar scent of Thai Mango sticky rice welcome and comfort the drinkers from the hectic workplace environment.
<b>Passion</b>	Safflower, Black tea, Sweet Osmantus, etc.	pale orange	The booze of caffeine from red tea and others active ingredients offers the push for anyone who are exhausted to the last working day.
<b>Aquamarine</b>	Butterfly pea flower, Rose Vanilla bean, etc.	pale blue	It is preparation for awaiting weekend. Mint yields the feeling of freshness, while the after taste of rose flavaour leaves some mystery to explore during the weekend.



**Figure 5**

*Original version for Packaging design for 5 coloured tea blends.*



**Figure 6**

*Adapted version of Packaging design for more cost effective.*



When opened, there is a display of text and illustration about the ingredients and concept of each blend. This helps the customers to learn more about the products, while the VI sales assistants can offer more information and trigger them with some questions to help the selection process easier.



**Figure 7**

*Booth and Product Display (Left and middle) and the VI on duty (Right).*



**5 CONCLUSION**

Through a carefully structured curriculum, participants were able to acquire a deep understanding of tea blending techniques, from selecting the right ingredients to mastering the art of flavor balancing. The program also emphasized the importance of creating a memorable customer experience, incorporating elements of sensory engagement and storytelling.

One of the key factors contributing to the program's success was the collaborative approach adopted. By fostering partnerships between various organizations and experts, the program was able to provide participants with a comprehensive range of support and resources. This multidisciplinary network played a vital role in ensuring that the participants received the necessary guidance and mentorship to succeed.

**ACKNOWLEDGEMENTS**

This research work is supported by the Project (71372111) supported by National Research Council of Thailand (NRCT).



## REFERENCES

- Carman, J. M. (2002). Blended Learning Design: Five Keys Ingredients. Retrieved 2023, April 10, from <http://blended2010.pbworks.com/f/Carman.pdf/>. (In Thai).
- Kantachan T., Soontrunnarudrungsri, A., Wangmanaopitak, S. and T. Wongsheree (2017). The Difference in Sorting Aroma of Cooked Rice by Visually Impaired People and Regular Eyesight People The 19th Food Innovation Asia Conference, pp. 95-103.
- Plutchik, R. (1980). A general psychoevolutionary theory of emotion. In R. Plutchik, and H. Kellerman (Eds.), *Emotion: Theory, Research, and Experience* (pp. 3-33). New York: Academic Press.
- Schwenn O., Hundorf I., Moll B., Pitz S., and W.J. Mann (2002). Können Blinde besser riechen als Normalsichtige? [Do blind persons have a better sense of smell than normal sighted people?]. *Klin Monbl Augenheilkd* 219(9), 649-54. German. doi: 10.1055/s-2002-35167. PMID: 12410464.
- Wongsheree, T., Soontrunnarudrungsri, A., Wangmanaopitak, S., Singla, P., and T. Chuichu (1997). Development of Trained Panelist from Visually Impaired People for Sensory Descriptive Analysis. Final Report, National Research Council of Thailand Granting year 1995, 72 pp.
- Zeithaml, V. A., Berry, L. L., and A. Parasuraman (1996). The behavioral consequences of service quality. *Journal of Marketing*, 60, 31–46. <https://doi.org/10.2307/1251929>
- Zhang, Y. (2015) The Impact of Brand Image on Consumer Behavior: A Literature Review. *Open Journal of Business and Management*, 3, 58-62. doi: 10.4236/ojbm.2015.31006.