

WeChat gamification: mobile payment impact on word of mouth and customer loyalty

Asad Hassan Butt

*Department of Marketing, Faculty of Business Administration,
University of Tabuk, Tabuk, Saudi Arabia and
Faculty of Management Sciences, University of Central Punjab, Lahore, Pakistan*

Hassan Ahmad

*Business School, Liaoning University, Shenyang, China and
Department of Management Sciences, University of Okara, Okara, Pakistan*

Asif Muzaffar

Birmingham City University, Birmingham, UK, and

Waseem Irshad, Muhammad Usman Mumtaz and

Talha Zubair Ahmad Khan

Faculty of Management Sciences, University of Central Punjab, Lahore, Pakistan

Received 24 January 2023
Accepted 26 February 2024

Abstract

Purpose – This study aims to investigate how gamification, namely, WeChat's cultural gifting function, improves emotional involvement among three generations (Y, X and silver) in mobile payments. It draws attention to the beneficial effects of cultural components and digital intimacy on gamified mobile payment systems.

Design/methodology/approach – The data were collected from Y, X and silver generation in Dalian, China. The users were well equipped with the WeChat pay features and had experience. The PLS-SEM software was used to assess the data.

Findings – The findings show that consumer word of mouth and loyalty are positively impacted by perceived utility, fun, and enjoyment. Besides, gamification components like fun and playfulness have a favourable effect on how useful mobile payments are judged to be. It demonstrates how delighted and ecstatic users are with WeChat Hongbao. In addition, the positive moderation effect of intimacy on the hypothesised connections shows that all three generations are likely to accept gamified money features. These results provide a substantial contribution to our comprehension of gamification in the context of mobile payment services for all three generations.

© Asad Hassan Butt, Hassan Ahmad, Asif Muzaffar, Waseem Irshad, Muhammad Usman Mumtaz and Talha Zubair Ahmad Khan. Published in *Spanish Journal of Marketing - ESIC*. Published by Emerald Publishing Limited. This article is published under the Creative Commons Attribution (CC BY 4.0) licence. Anyone may reproduce, distribute, translate and create derivative works of this article (for both commercial and non-commercial purposes), subject to full attribution to the original publication and authors. The full terms of this licence may be seen at <http://creativecommons.org/licenses/by/4.0/legalcode>

Funding: There is no funding available for the research work.

Declarations: There is no conflict of interest among the authors.



Originality/value – The study is distinctive because it focuses on how China's three generations use WeChat Pay for routine transactions. The framework confirms that the gamification elements improve user performance and encourage continued usage of mobile payment systems.

Keywords Gamification, Generation, Playfulness, Enjoyment, Mobile payment, Intimacy

Paper type Research paper

Gamificación de WeChat: impacto del pago móvil en el boca a boca y la fidelidad del cliente

Resumen

Objetivo – Este estudio investiga cómo la gamificación, específicamente la función de regalos culturales de WeChat, mejora la participación emocional entre tres generaciones (Y, X y plata) en los pagos móviles. Se presta atención a los efectos beneficiosos de los componentes culturales y la intimidad digital en los sistemas de pago móvil gamificados.

Diseño/metodología/enfoque/Metodología/Enfoque – Los datos fueron recopilados de las generaciones Y, X y plata en Dalian, China. Los usuarios estaban familiarizados con las características de pago de WeChat y tenían experiencia. Se utilizó el software PLS-SEM para evaluar los datos.

Resultados – Los resultados muestran que la reputación y la lealtad del consumidor son positivamente influenciadas por la utilidad percibida, la diversión y el disfrute. Los componentes de gamificación, como la diversión y la jugabilidad, tienen un efecto favorable en cómo se juzga la utilidad de los pagos móviles. Se demuestra cuán encantados están los usuarios con WeChat Hongbao. Además, la moderación positiva de la intimidad en las relaciones supuestas muestra que las tres generaciones tienen probabilidades de aceptar las características de dinero gamificado. Estos resultados contribuyen sustancialmente a nuestra comprensión de la gamificación en el contexto de los servicios de pago móvil para las tres generaciones.

Originalidad – El estudio es novedoso ya que se centra en cómo las tres generaciones de China utilizan WeChat Pay para transacciones rutinarias. El marco confirma que los elementos de gamificación mejoran el rendimiento del usuario y fomentan el uso continuado de los sistemas de pago móvil.

Palabras clave Gamificación, Generación, Jugabilidad, Disfrute, Pago móvil, Intimidad

Tipo de artículo Trabajo de investigación

WeChat游戏化：移动支付对口碑和客户忠诚度的影响

摘要

目的 – 本研究探讨了游戏化,即微信的文化赠送功能,如何提高三代人(Y、X和银发族)在移动支付中的情感投入。它引起了人们对文化成分和数字亲密关系对游戏化移动支付系统的有益影响的注意。

设计/方法/途径 – 数据来自中国大连市的Y、X和银发族用户。用户对微信支付功能非常熟悉,并具有使用经验。采用PLS-SEM软件对数据进行评估。

研究结果 – 结果表明,消费者的口碑和忠诚度受到了感知效用、乐趣和享受的积极影响。乐趣和趣味等游戏化组件对移动支付的有用性评估产生了积极影响,展示了用户对微信红包的喜悦和兴奋程度。此外,亲密关系对假设连接的正向调节效应表明,三代人都可能接受游戏化货币功能。这些结果为我们理解移动支付服务背景下游戏化对三代人的贡献提供了实质性的帮助。

创新性 – 该研究独特之处在于它着眼于中国三代人如何将微信支付用于日常交易。该框架证实了游戏化元素如何提高用户绩效并鼓励继续使用移动支付系统。

关键词 游戏化,代际,趣味,享受,移动支付,亲密关系

文章类型 研究型论文

1. Introduction

The digital age has transmuted our day-to-day lives as we operate in the quotidian doings. One such application that has interceded into people's daily lives is mobile payment services for transactions (Iman, 2018). Few societal groups have chosen to use mobile payment systems, but not all do so because of the convenience and other advantages they offer (Ali *et al.*, 2023). The study demonstrated the importance of technology among older

persons, but further research is needed to comprehend the integration and use of such technologies among the silver generation. (Lien and Cao, 2014). The difficulty remains because digital payment methods are constantly changing, and the digital attachment gap is widening. Understanding these three generations can help us better understand the complicated patterns involved in accepting and using digital payments. The existing literature has verified the acceptance and adoption of such technology among various populations, as well as how it influences and affects them (Ahmad *et al.*, 2022; Martínez-López *et al.*, 2020).

Tech titans are continuously developing gaming elements to get users to use mobile payment services. One such feature is gamification, which appeals to the end-user by co-creating activities in the usage of technology (Prestopnik *et al.*, 2017). Digital payment technology has become a cornerstone in many countries, but more investigation must understand the gamification effect on mobile payments. The previous literature has focused on exploring the effects of gamification on the younger segment (Taipale *et al.*, 2021), whereas more is required to understand the generation Y, X, and silver altogether within one country mobile payment framework. The current study will look into the effects of gamified money on the use of mobile payments with a word of mouth (WOM), loyalty, and intimacy element. In China, QR code payments represent a key economic foundation, and customers use systems like WeChat and Alipay on a daily basis (Sun *et al.*, 2022). Consumers can use these apps for social interactions and also for their daily buying of groceries, and other consumer items (Al-Sharafi *et al.*, 2022). Therefore, such companies are adding gamification options to these payments to make them more interesting for consumers. For the gamification of mobile payments, more investigation is required to understand consumer behaviour. Thus, there is a requirement to understand these research gaps and have an understanding about how consumer react, act and show loyalty towards such programs. Gamification is an interesting tool that has been used by brands to enhance the consumer engagement, WOM and also loyalty. Therefore, the current study will look into the gaps where consumers and technology play an important role in the mobile payments through the gamification. Following are the research questions which will be examined to comprehend the idea of gamification in mobile payments:

RQ1. Can gamification enhance the usefulness of mobile payments?

RQ2. Can intimacy play a role in mobile payments and lead to WOM and customer loyalty?

The research gaps and queries will aid the authors in determining the essential components of the Chinese study. China is a vast platform for mobile payment service providers and end users. Mobile payment systems such as Alipay and WeChat offer gamified money alternatives based on the cultural tradition of gifting hongbao (red packets, which are monetary gifts) to facilitate the spread of mobile payment in the country. Brands using WeChat services utilise red packets to entice customers. This concept provides a critical perspective from which to answer the research questions. First, the research will look into the effects and factors of mobile payment usage among the Y, X and silver generations. Second, the role of gamification as gamified money via playfulness and enjoyment will be examined further among the Y, X and silver generations. Third, the impacts of intimacy (affiliation with the service provider) can result in favourable WOM and consumer loyalty. The current research methodology will aid in the understanding of gamification and the creation of its theory based on mobile

payment usage across three generations. The remaining portions of the study are as follows: literature review, methodology, analysis, discussion, limits and conclusion.

2. Literature review

2.1 Generation Y, X and silver's technology usage

With the advent of technology, various generational differences have become essential in understanding consumer behaviour (Zhong *et al.*, 2021). As mentioned earlier, the Y, X and silver generations refer to age groups with various cognitive and emotional behaviour (Berraies *et al.*, 2017). Generation Y was born after 1980 and is surrounded by technology, i.e. the internet (Prasad *et al.*, 2019; Wang *et al.*, 2021a). Generation X, those born after 1965, are known for their adaptability to technology, as well as their balanced and flexible approach to life's challenges (Shams *et al.*, 2020). Silver generation refers to those above 50, sometimes termed "digital immigrants" (Wong *et al.*, 2021). Digital natives are individuals who naturally embrace technology from an early age, seamlessly integrating it into their daily lives (Wong *et al.*, 2021). The current framework will focus on the gamification dimensions, the usefulness of mobile payments and their impact on WOM and customer loyalty.

The current framework pursues developing a model with gamified applications inclusive of Y, X and silver generations. They will find it helpful and intimate, leading to positive WOM and loyalty. The younger lot, i.e. Generation Y and X, spend less time thinking and spend more on their needs and wants (Jiang *et al.*, 2021; Trivedi and Yadav, 2020). Brands also use options of red packets on different social media applications in China to attract consumers, especially youngsters (Chu *et al.*, 2019). The silver generation also referred to as the "silver economy", has spending power but is conscious of spending just like that (Wong *et al.*, 2021). It is estimated that the spending power of Y is more than \$1.4tn (Tangsupwattana and Liu, 2018), X is more than \$2.4tn (Lissitsa and Laor, 2021) and silver generation is more than \$15tn (Wong *et al.*, 2021).

2.2 Y, X and silver generation usage of mobile payment

A financial transaction using a mobile phone device in a private or business nature is termed a mobile payment (Cao *et al.*, 2018). One of the fastest cashless economies is China, with mobile payment services by Alipay and WeChat Pay (Kow *et al.*, 2017). Generation Y and X have already adopted such technologies. They are eager to adopt more new features as they come into play, whereas the silver generation is still slow in accepting such technological advancements (Wong *et al.*, 2021). The current study framework will highlight how the three generations act and react towards mobile payment technology. Alipay and WeChat Pay are the leading mobile payment service providers in China, but WeChat has more active users (Chu *et al.*, 2019). As China controlled COVID-19 and almost eliminated it, the use of mobile payment by different age groups has risen, especially in these times (Wong *et al.*, 2021).

2.3 WeChat red envelope (hongbao) – gamified money

Alipay was one of the most potent mobile payment services before the introduction of WeChat (Patil *et al.*, 2020). The tech developers such as Tencent needed to develop unique features to grow the usage of WeChat among different age segments. Hence, the game-changer introduced the red packet feature as a gift in terms of monetary value. The hongbao, or red packet, is a custom deeply rooted in traditional Chinese culture, where money is given as a gesture of goodwill and celebration, commonly observed at events like weddings and birthdays (Zeng Skovhøj, 2021). Since its introduction in 2014, this feature has sparked a digital revolution in mobile payment services, significantly contributing to the expansion of WeChat services (Butt *et al.*, 2021a; Su and Tong, 2021). The use of red packets

on WeChat made sales and growth for the company and invited more new consumers from different age groups (Petrovčić *et al.*, 2018). The use of hongbao (red packet) has become symbolic in China in different celebrations for youngsters and the older generation. Hence, the gamified elements, i.e. the playfulness and enjoyment of WeChat's red packet, can give valuable insights into WOM and loyalty. The younger generation associates themselves with gamified money options, but more investigation is required to understand the booming silver generation.

2.4 Gamification

Technology has helped society in many ways and supports the field of retailing, education, banking and tourism (Butt *et al.*, 2021b). In these digital innovations, one of the most popular progress is gamification which co-creates values among the user and service provider by enhancing the intrinsic motivational values through gaming features (Koivisto and Hamari, 2014). The dimensions of playfulness and enjoyment are important factors for understanding the effects of gamification on technology usage (Kang *et al.*, 2020).

2.4.1 Conceptualization of gamification. Gamification is a gameful experience that can enhance users' experience by creating values in a non-game context (Huotari and Hamari, 2017). Thus, consumers can have a gaming experience using technology differently (Hsu and Chen, 2018). The gamification and services marketing practices have similarities and can create value for the user during technology usage (Klapztein and Cipolla, 2016). The use of gamification can bring valuable insights towards the Y, X and silver generation in mobile payment services.

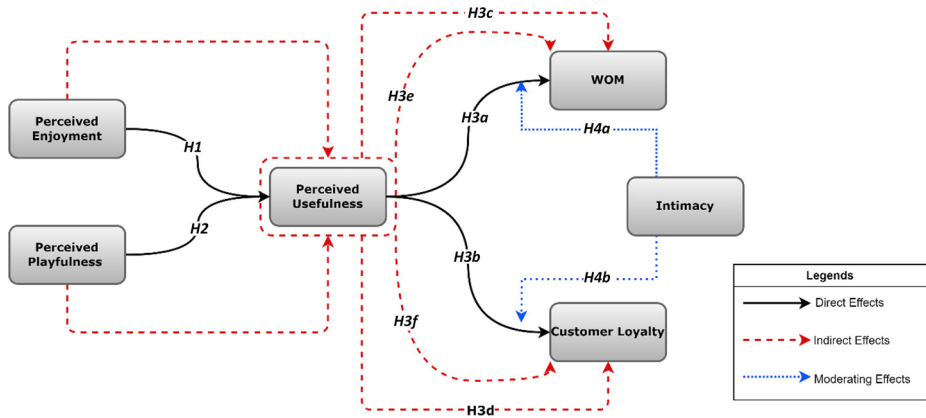
2.4.2 Contextualization of gamification. The use of gamification previously was focused on health, crowdsourcing and education (Koivisto and Hamari, 2014). The gamification features have been found to affect consumers in different aspects, such as reducing energy consumption (Günther *et al.*, 2020), intimacy towards loyalty schemes (Huang *et al.*, 2019) and adoption of novel technologies (Müller-Stewens *et al.*, 2017). The context of a particular phenomenon is important to understand and, in this study, it is the WeChat mobile payments and the hongbao. Its fame also approves the efficacious amalgamation of gamification. As suggested in previous studies, gamification features impact consumer behaviour (Koivisto and Hamari, 2014). Hence, Y, X and silver generation behaviour towards mobile payment usage regarding gamification can provide a significant view. The consumer behaviour of these generations will help companies to develop more gamification activities in their retail services. The Figure 1 provides the conceptual framework of this study. The key features of the current study are the gamified money elements such as enjoyment and playfulness, the usefulness of technology and intimacy effects on WOM and loyalty.

2.4.3 Perceived enjoyment. A situation where an individual feels pleasure of doing something is known as enjoyment (Butt *et al.*, 2021a). The successful outcome in gamification depends on the gaming experience's pleasantness (Wang *et al.*, 2021b). The perceived enjoyment dimension in gamified money produces positive emotions and expresses the fun and entertaining gaming experience (Rouibah *et al.*, 2016). Previous studies have suggested that enjoyment during technology usage can enhance user performance and acceptance of the latest technologies (Butt *et al.*, 2021b). In gamification, the user experience also plays a significant role, especially when enjoyable and playful (Fitz-Walter *et al.*, 2017). We propose:

H1. Perceived enjoyment positively impacts perceived usefulness.

2.4.4 Perceived playfulness. The cognitive impulses of the user and the service provider in interacting with a particular technological system are known as playfulness (van der Zeeuw *et al.*, 2022). The perception of activities in gamification affects the user in the social contextual

Figure 1.
Conceptual
framework



cues (Huang and Liu, 2014). Playfulness in activities can have a good impact on the service or technology. Gamification can potentially give a unique and creative method of impending an activity. In a gamification setting, the interaction between the user and the service provider might result in playfulness (Duffy et al., 2021). Gamified money playfulness can influence consumers towards the usage of mobile payments. In short, a consumer who uses a technological system such as mobile payment may find the playfulness of the system to be effective. We propose:

H2. Perceived playfulness positively impacts perceived usefulness.

2.5 Perceived usefulness, word of mouth and customer loyalty

An individual believes that use of a particular service or technology can enhance the performance is known as perceived usefulness (Butt et al., 2021b). The dimensions of TAM: perceived ease of use and perceived usefulness, have been explored in the light of gamification systems (Huang et al., 2019). Gamification has been investigated with young adults typically, and very few studies are available with the silver generation (Petrovčić et al., 2018). Consumer behaviour can be understood through the technology used and the current study is focusing on three generations. Therefore, the current framework will understand help the authors in understanding the research gaps and questions as to why gamification is becoming important in mobile payments and how three generations are using such features. Hence, perceived usefulness will create a positive impact on WOM and customer loyalty through the gamification features on WeChat. We propose the following:

H3a. Perceived usefulness positively impacts word of mouth.

H3b. Perceived usefulness positively impacts customer loyalty.

2.5.1 Mediation effects of perceived usefulness. Furthermore, it is worth noting that the perception of utility serves as a vital mediator between perceived enjoyment, playfulness and the likelihood of WOM recommendations. Furthermore, the amount to which mobile payments are seen as useful has a favourable influence on consumer loyalty (Butt et al., 2023). Notably, the impact of these factors may alter among age groups. Younger

generations, such as Generation Y and Generation X, are more likely to be impacted by the existence of gamified money features in mobile payment services (Lien and Cao, 2014; Wong *et al.*, 2021). These features inherently appeal to their preferences for engaging and interactive experiences. On the other hand, the silver generation may exhibit some degree of hesitancy, as they may not be as accustomed to or enthusiastic about such gamification elements in mobile payments:

- H3c.* Perceived usefulness mediates the relationship between perceived enjoyment and word of mouth.
- H3d.* Perceived usefulness mediates the relationship between perceived enjoyment and customer loyalty.
- H3e.* Perceived usefulness mediates the relationship between perceived playfulness and word of mouth.
- H3f.* Perceived usefulness mediates the relationship between perceived playfulness and customer loyalty.

2.6 Intimacy moderation

The close relationships and emotions that evolve with a relationship are known as intimacy (Sandel and Wang, 2022). Emotional value is important for consumers during shopping and transactions. As discussed earlier, playfulness and enjoyment are temporarily affective factors representing short-term emotions. The accumulation of emotions over time is known as accumulatively affective factors. The use of intimacy is to understand the relationship or association between the user and the service provider (Yuan *et al.*, 2020). In light of the current study, the use of intimacy is well following understanding of the users' relationship with the brand, i.e. WeChat. With time, users' experience transforms from a typical relationship to a stronger one with the brand, according to the social penetration theory (Kim *et al.*, 2021; Mumtaz *et al.*, 2021). We can assume that WOM and customer loyalty may increase with the gamified money options during mobile payments. Intimacy is quite a complex factor in understanding the user and the service, but it can provide valuable insights into using mobile payments with gamified money. Gamified features in mobile payments can enhance consumer engagement and intimacy may lead to WOM and customer loyalty. We assume that intimacy will significantly mediate the perceived usefulness of mobile payment, WOM and loyalty. We propose the following:

- H4a.* Intimacy moderates the relationship between perceived usefulness and word of mouth.
- H4b.* Intimacy moderates the relationship between perceived usefulness and customer loyalty.

3. Methodology

3.1 Data collection

The data was collected from three generations, i.e. Y, X and silver. The questionnaire was developed in English and then translated into Chinese with the help of Chinese scholars through a team translation approach (Douglas and Craig, 2007). The authors collected data right after Chinese New Year 2022 between February and March. The respondents had sent

and received the red packets in this year's celebration. Also, other respondents have used mobile payments on WeChat to use the services available such as buying a product or service. The Y, X and silver generation respondents know about using red packets (hongbao). The use of three generations is solely to understand their behaviour and impact on WOM and customer loyalty. The use of intimacy is an interesting approach in the current study to highlight the use of gamified features in mobile payments.

The brands and individuals use red packets to interact and engage with the users. Elders of a family use red packets on special occasions, and brands also use the power of red packets to engage with their customers. The current framework will help the authors in understanding the consumer behaviour of three generations in the usage of the gamified WeChat payment options. This can provide positive outcomes for the brands and individuals and make the red packets more interesting, engaging, and interactive through gamification. With age, consumer preferences change as maturity prevails. The use of gamification of WeChat payments will be interesting for all three generations. Therefore, the intimacy levels will also differ for all three generations. So, individuals who have experienced the gamification impact of red packets on WeChat are part of it. The following Table 1 shows the representation of all three generations with their profiling. The data collection was made possible through WeChat, and the city of Dalian was part of this study. Dalian is a major coastal city in China with a population of more than 10 million.

Variable	Cases (%)		
	Silver	X	Y
<i>Gender</i>			
Male	101 (58.3)	144 (71.6)	131 (59.2)
Female	72 (41.6)	57 (28.3)	90 (40.7)
<i>Age</i>			
25–29	–	–	166 (75.1)
30–34	–	–	55 (24.8)
35–40	–	119 (59.2)	–
41–49	–	82 (40.8)	–
50–Above	173 (100)	–	–
<i>Education</i>			
High school	97 (56.0)	13 (6.4)	3 (1.3)
Undergraduate degree	68 (39.3)	141 (70.1)	165 (74.6)
Master degree	7 (4.0)	44 (21.8)	50 (22.6)
PhD degree	1 (0.5)	3 (1.4)	3 (1.3)
<i>Occupation</i>			
Student	–	–	21 (9.5)
Job	153 (88.4)	188 (93.5)	191 (86.4)
Business	20 (11.5)	13 (6.4)	9 (4.0)
<i>Income per month (RMB)</i>			
<4,999	33 (19.0)	17 (8.4)	3 (1.3)
5,000–14,999	39 (22.5)	37 (18.4)	70 (31.6)
15,000–24,999	38 (21.9)	44 (21.8)	88 (39.8)
25,000–34,999	26 (15.0)	55 (27.3)	44 (19.9)
>35,000	37 (21.3)	48 (23.8)	16 (7.2)

Table 1.
Respondent profile
(silver: 173, X: 201
and Y: 221)

3.2 Data measures

The instruments were adapted from previous literature. The instruments details with references are provided in Table 2. Five-point Likert scale is used to measure the results.

4. Research analysis

4.1 Measurement model analysis

The psychometric properties of constructs have been analysed and reported in Table 2. The finding presented in Table 2 illustrates that factor loading has significant values and no value is less than the threshold of 0.60 (Dijkstra and Henseler, 2015; Henseler et al., 2016). Uni-dimensionality of constructs has been measured through a convergent validity test, the average variance extracted (AVE) and all the values are above the threshold of 0.50

Items	Overall factor loading
<i>Customer loyalty (CLOY)</i>	
<i>Adapted from Hwang et al. (2021) $\alpha = 0.816$; CR = 0.891; AVE = 0.732</i>	
I will consider WeChat payment as my first choice for payment in the future	0.885
It would be difficult to change my belief about WeChat payments	0.863
My preference will remain for transactions through WeChat payments	0.817
<i>Intimacy (INTM)</i>	
<i>Adapted from Huaman-Ramirez et al. (2022) $\alpha = 0.8260$; CR = 896; AVE = 0.742</i>	
I think using WeChat payments is friendly	0.871
I use WeChat payments without any issues	0.890
I feel a sense of intimacy with WeChat payments	0.822
<i>Perceived enjoyment (PERENJ)</i>	
<i>Adapted from Butt et al. (2021a) $\alpha = 0.885$; CR = 0.921; AVE = 0.744</i>	
I find the experience of using Hongbao on WeChat is pleasant	0.831
I find the experience of using Hongbao on WeChat is exciting	0.858
I find the experience of using Hongbao on WeChat is interesting	0.874
I find the experience of using Hongbao on WeChat is enjoyable	0.886
<i>Perceived playfulness (PPFN)</i>	
<i>Adapted from Kang et al. (2020) $\alpha = 0.882$; CR = 0.918; AVE = 0.737</i>	
This Hongbao option on WeChat is playful	0.824
This Hongbao option on WeChat is creative	0.877
This Hongbao option on WeChat is inventive	0.854
This Hongbao option on WeChat is experimenting	0.879
<i>Perceived usefulness (PU)</i>	
<i>Adapted from (Butt et al., 2021b) $\alpha = 0.840$; CR = 0.893; AVE = 0.677</i>	
Using WeChat payments is easy for me	0.834
Using WeChat payments increases my efficiency	0.819
I can pay more quickly through WeChat payments	0.859
Using WeChat payments useful for daily transactions	0.775
<i>Word of mouth (WOM)</i>	
<i>Adapted from Kuppelwieser et al. (2022) $\alpha = 0.825$; CR = 0.896; AVE = 0.741</i>	
I will positively recommend others WeChat payments	0.871
I will encourage my friends and family to use WeChat payments for shopping	0.884
I will regularly ask others to use WeChat payments	0.826

Notes: α , CR and AVE denote Cronbach's alpha, composite reliability and average variance extracted, respectively

Table 2.
Reliability and
validity (overall
sample)

(see Table 2) (Henseler *et al.*, 2016). Results in Table 2 show that constructs are internally consistent as the values are more critical than 0.80 (Brunner and Süß, 2005). Fornell–Larcker criterion (Fornell and Larcker, 1981) and heterotrait-monotrait (HTMT) ratio (Henseler *et al.*, 2015) have been used to test the discriminant validity of constructs. In the context of this study, all the values of the AVE square root are greater than the correlation values. Results for the HTMT ratio have been reported in Table 3, and all the values are lower than the criteria of 0.90, hence validating the discriminant validity of constructs. Finally, we have tested for common method variance; we have used the inner variance inflation factor (VIF) test as suggested by Kock (2015). The threshold of inner VIF is 3.3; all the VIF values are lower than this threshold; therefore, this study is free from the common method bias problem.

The bootstrapping technique evaluated the structural model with 5,000 subsamples (Henseler *et al.*, 2016). Next, we explain the hypothesis testing results in Table 4, indicating that perceived enjoyment has a direct, significant and positive effect on perceived usefulness in all samples (Generation silver, X and Y). Therefore, *H1* is robustly supported at a 1% level of significance. According to the coefficients of the three samples, there are slight differences between generations; for example, in silver generation and generation Y, the enjoyment level is higher than the generation X. *H2* for silver generation is not supported because of the insignificant coefficient; however, *H2* for generation Y and X has been supported based on empirical results, where we proposed a positive and significant effect of perceived playfulness on perceived usefulness. According to the coefficient values, generation X has a more considerable value than the silver and Y generations, meaning Generation X finds the interaction with the Web more attractive than other generations. *H3a* and *H3b* indicate a positive and significant effect of perceived usefulness on WOM and customer loyalty, respectively.

There is a significant difference between the coefficients of generations, e.g. the coefficient of generation Y is stronger than the coefficient of silver and X generation,

Constructs	1	2	3	4	5	6
<i>Silver generation</i>						
(1) Customer loyalty						
(2) Intimacy	0.623					
(3) Perceived enjoyment	0.480	0.437				
(4) Perceived playfulness	0.328	0.383	0.275			
(5) Perceived usefulness	0.551	0.554	0.623	0.247		
(6) WOM	0.696	0.591	0.581	0.395	0.531	
<i>Generation X</i>						
(1) Customer loyalty						
(2) Intimacy	0.863					
(3) Perceived enjoyment	0.687	0.560				
(4) Perceived playfulness	0.652	0.477	0.578			
(5) Perceived usefulness	0.852	0.541	0.669	0.514		
(6) WOM	0.687	0.816	0.610	0.684	0.707	
<i>Generation Y</i>						
(1) Customer loyalty						
(2) Intimacy	0.573					
(3) Perceived enjoyment	0.685	0.550				
(4) Perceived playfulness	0.305	0.382	0.203			
(5) Perceived usefulness	0.826	0.530	0.766	0.298		
(6) WOM	0.774	0.582	0.752	0.319	0.808	

Table 3.
HTMT ratio
(discriminant
validity)

Paths	Silver generation		Generation X		Generation Y	
	β	Decision	β	Decision	β	Decision
<i>Direct effects</i>						
<i>H1</i> : PERENJ \rightarrow PU	0.527***	Supported	0.457***	Supported	0.654***	Supported
<i>H2</i> : PPFN \rightarrow PU	0.096	Not supported	0.210***	Supported	0.152***	Supported
<i>H3a</i> : PU \rightarrow WOM	0.261**	Supported	0.323***	Supported	0.413***	Supported
<i>H3b</i> : PU \rightarrow CLOY	0.257***	Supported	0.308***	Supported	0.510***	Supported
<i>Mediating effects</i>						
<i>H3c</i> : PERENJ \rightarrow PU \rightarrow WOM	0.138*	Supported	0.148***	Supported	0.270***	Supported
<i>H3d</i> : PERENJ \rightarrow PU \rightarrow CLOY	0.136**	Supported	0.141***	Supported	0.334***	Supported
<i>H3e</i> : PPFN \rightarrow PU \rightarrow WOM	0.025	Not supported	0.068*	Supported	0.063***	Supported
<i>H3f</i> : PPFN \rightarrow PU \rightarrow CLOY	0.025	Not supported	0.064**	Supported	0.077***	Supported
<i>Moderating effects</i>						
<i>H4a</i> : INTM*PUWOM \rightarrow WOM	-0.030	Not supported	-0.029	Not supported	-0.153***	Supported
<i>H4b</i> : INTM*PUCL \rightarrow CLOY	-0.027	Not supported	-0.126***	Supported	-0.098***	Supported

Notes: ¹CLOY = customer loyalty; INTM = intimacy; PERENJ = perceived enjoyment; PPFN = perceived playfulness; PU = perceived usefulness; WOM = word of mouth; ***, ** and * indicate significance level @0.1, 5 and 10%, respectively

Table 4.
Hypothesis testing

indicating the more substantial impact of perceived usefulness on WOM and customer loyalty. We examine the mediation effect of perceived usefulness in *H3c–H3f*. According to the results provided in [Table 4](#), perceived usefulness plays a significant mediating role between perceived enjoyment and WOM and perceived enjoyment and customer loyalty with similar differences as illustrated above explained hypothesis. Mediation effects are more potent in Generation Y; Generation X coefficients are smaller than Generation Y but greater than the silver generation. Therefore, *H3c* and *H3d* are supported. In *H3e* and *H3f*, we proposed that perceived usefulness plays a mediating role between perceived playfulness, WOM and customer loyalty. Results indicate that perceived playfulness mediates the said relationship for the X and Y generations, but the same is not valid for the silver generation.

May be silver generation is not more interactive with today's technology; therefore, they cannot build an interactive relationship with the Web. Overall, the results are better for generations X and Y but slightly disturbed for the silver generation. The possible reason for this can be the generation gap and rapid growth of technology; the silver generation could not keep pace with fast-changing technology, and that is why they are behind the young generations. *H4a* and *H4b* illustrate the moderating effect of intimacy on the direct relationship between perceived usefulness and WOM and perceived usefulness and customer loyalty. Unfortunately, the moderating effect of intimacy is insignificant for the silver generation, as they are unfamiliar with or attached to the current technology. Whereas the moderating impact of intimacy is true for Generation Y, the moderating influence on perceived usefulness and WOM are not true for Generation X. The moderating effect for Generation is more substantial compared to silver generation and Generation X. [Table 5](#) represents the coefficient of determination values and hypotheses results.

First, we explain the predictive power of independent constructs on the relative dependent constructs. R^2 and adjusted R^2 demonstrate the predictive power of different constructs. The predictive power of Generation Y is more than silver and Generation X, whereas Generation X outperforms the silver generation. The following [Table 6](#) provides

details of multi-group analysis (MGA). MGA provides statistical detail of the three generations whether they are significant or not. Table 6 gives an overview and shows the significance of the three generations use in the current study.

5. Discussion

The findings of the study provide an in-depth analysis of the three generations that use gamified features of mobile payments on WeChat. The results show that gamification enhances WOM and loyalty towards the brand. Gamification can add value for brands, and it increases customer value with the use of mobile payments (Dzandu *et al.*, 2022). Understanding the social penetration theory and TAM, we can conclude that Generation Y has more positive outcomes than X and silver generations. The silver generation did not gamify money a playfulness aspect, and moderation of intimacy was not that effective. In the future, the silver economy is booming in many developing countries; therefore, it will be useful to comprehend their behaviour further with the use of gamified features of mobile payment. Generation X showed positive results, but the intimacy moderation on WOM was not supported. Perhaps, further investigation into the generational studies will provide more details about the use of gamified mobile payment adoptions and usage (Mobarak *et al.*, 2022; Tao *et al.*, 2018). Generation Y, the millennials, was the best out of the lot where all the hypotheses were supported.

Generation Y showed better prospects of playfulness and enjoyment in mobile payment services' gamification systems, which aligns with previous studies (Koivisto and Hamari, 2019). Intimacy is all about attachment and consumers show affection towards their favourite brand in the form of loyalty or brand advocacy (Huaman-Ramirez *et al.*, 2022). Further moving on with gamification understanding, we see that it triggers the emotional aspects of

Table 5.
Coefficient of determination

Dependent constructs	Silver generation		Generation X		Generation Y	
	R ²	R ² adjusted	R ²	R ² adjusted	R ²	R ² adjusted
Customer loyalty	0.367	0.356	0.559	0.553	0.604	0.598
Perceived usefulness	0.311	0.303	0.351	0.345	0.488	0.483
WOM	0.347	0.335	0.448	0.440	0.618	0.613

Table 6.
Multi-group analysis (MGA)

Path description	Difference (Silver – X)	Difference (Silver – Y)	One-tailed (Silver vs X)	One-tailed (Silver vs Y)	Two-tailed (Silver vs X)	Two-tailed (Silver vs Y)
			p-value	p-value	p-value	p-value
H1: PERENJ → PU	-0.127	0.070	0.864	0.300	0.271	0.599
H2: PPFN → PU	-0.056	-0.114	0.718	0.840	0.563	0.320
H3a: PU → WOM	-0.151	-0.062	0.872	0.677	0.256	0.646
H3c: PERENJ → PU → WOM	-0.249	-0.044	0.986	0.661	0.028**	0.679
H3d: PERENJ → PU → CLOY	-0.132	-0.010	0.922	0.562	0.156	0.876
H3e: PPFN → PU → WOM	-0.196	-0.002	0.988	0.523	0.025**	0.953
H3f: PPFN → PU → CLOY	-0.038	-0.043	0.863	0.831	0.275	0.338
H3c: PERENJ → PU → WOM	-0.053	-0.039	0.918	0.842	0.164	0.315
INTM*PUWOM → WOM	0.099	-0.005	0.042	0.607	0.085*	0.786
INTM*PUCL → CLOY	0.060	0.070	0.214	0.153	0.427	0.307

Notes: ***, ** and * indicate significance level @0.1, 5 and 10% respectively

the consumer to have a wonderful experience as the involvement with the user and the service provider increases. Furthermore, the usefulness of mobile payment positively affects WOM and loyalty, which shows that all three generations are eager to adapt and accept the latest technologies. In addition, the study highlighted a key point about gamification: it is no more just part of the younger generation. The silver generation can also be influenced by gamified money and can lead to WOM and customer loyalty. Hence, the framework of the study with a three-generation comparison has shown positive results in the gamification systems of mobile payments on WeChat.

5.1 Theoretical implications

The current research framework contributes to different theoretical aspects. First, the gamification perspective is enhanced from the three-generation analysis of Y, X and silver. The users show an attachment factor with the use of mobile payments on WeChat. Therefore, it is evident from the results that gamification enhances consumer engagement. The results contribute to the literature on gamification and perhaps to the formation of a gamification theory. The three-generation analysis has shown us that positive behaviour can lead to positive attitudes using gamification in mobile payments. This understanding will help researchers further understand gamification (Leclercq *et al.*, 2018). Second, gamified money highlighted the importance of playfulness and enjoyment during the involvement of mobile payment. The positive effect of playfulness and pleasure on perceived usefulness showed that gamification is a significant player in understanding consumer behaviour. The gamified features can enhance the playfulness and enjoyment of mobile payments (Abbasi *et al.*, 2023). Hence, using technology with gamification features shows positive outcomes for all three generations and contributes to the literature on playfulness and enjoyment.

The technology acceptance model has been widely used but its acceptance is there for the usage of technology and is still explored with new concepts such as metaverse and augmented reality (Oyman *et al.*, 2022; Wang *et al.*, 2020). The gamified features in mobile payments show that it is considered useful during transactions. The TAM model was extended in the light of gamification features in the mobile payment services among the three-generation analysis. It further signified that gamification is no longer just part of the younger lot; the silver generation is also becoming essential for future transactions. Hence, it enhances the silver generation perspective from the gamification point of view of how mobile payment is more valuable and effective for them than just in generations Y and X (Wong *et al.*, 2021). Finally, the affective factors show short- and long-term positive outcomes for the three generations. This signifies that more user involvement with mobile payment with gamification will enhance intimacy and usefulness, leading to WOM and customer loyalty. Intimacy is normally used with human relationships, but in the current framework, it was studied with human and technology relationships. It gave an interesting view of the gamified features of mobile payments of WeChat and how it impacted the three generations. Therefore, it contributes to the literature on intimacy from the perspective of humans and technology. Table 7 provides an overview of these implications.

5.2 Practical implications

The findings have fascinating practical consequences for brands. To begin, the findings gave detailed information on three generations, revealing that the silver generation is particularly interested in the gamified elements of mobile payments. To increase sales and revenue, technology companies must reconsider their strategy when implementing gaming features in mobile payment services and focus on digital inclusion of the silver generation.

	Conclusions	Theoretical and practical implications
Table 7. Conclusion and theoretical and practical implications	Findings emphasize gamification's importance in WeChat for Y, X and silver generations, enhancing engagement and satisfaction	Findings defy assumptions, providing insights for digital enhancement. With cross-generational relevance, it is a robust tool for engaging users. Consumer-centric development integrates entertaining features, gamification and customization
	Adding playful gamification to WeChat's payment boosts utility and practicality, facilitating seamless transactions and enhancing overall user satisfaction and engagement Understanding WeChat payments, gamification and consumer behaviour dynamics hinges on intimacy. Insights into emotional connections and trust shape user attitudes and behaviours in mobile payment technology	Gamifying payment in apps like WeChat disrupts norms, prioritizing user needs for loyalty and engagement. This innovation transforms payments from utilitarian to entertaining, enhancing retention value Examining intimacy in WeChat payments enriches theory and informs practical insights for user-centered design, marketing and education in mobile payment tech. Understanding psychological aspects aids in fostering emotional connections between consumers and technology

Digital transformation has increased the viability and accessibility of corporate operations for consumers (Li, 2022). Hence, digital information transfer can bring in more new customers from the silver generation and introduce a more conducive environment. The digital infrastructure has not limited to any age anymore. It has included more older adults, and more is required to include all the global citizens in the digital infrastructure (Eckebrecht, 2021). Secondly, gamified features can help brands to recruit new customers from all three generations. The digital revolution has made business and consumer engagement more intriguing and viable to operate on online and offline platforms (Sigov *et al.*, 2022). Thirdly, the pleasurable and playful experience can profoundly influence users towards mobile payment usage. The results of the current research framework can help other technology developers to use gamification features in their operational processes. Intelligent devices with gamification can further develop positive relationships, such as smart homes and smart health services (Meng *et al.*, 2021).

Fourthly, the study highlighted that the cultural aspect is not a barrier to implementing gamification. The results showed that gamification could lead to positive outcomes such as WOM and customer loyalty. Tech developers should focus on developing more in-game features concerning gamification regardless of age and culture (Thangavel *et al.*, 2022). The usage of the WeChat red packets in the current framework showed that the three-generation all supported the gamified money features in the mobile payment services. The pleasurable experience effect of gamification has demonstrated positive outcomes. The tech developers need to develop more new creative ideas to attract consumers and enhance mobile payment usage among all three generations. Finally, intimacy is key in attracting consumers to the mobile payment service in the gamification mode. The brands can improvise in their strategy and introduce more pleasurable features that can enhance the consumer attachment to the brand. Therefore, the results show that a positive association with the brand can lead to positive WOM and customer loyalty. Table 7 provides an overview of these implications.

6. Limitations and further research

The results were exciting, but they had a few limitations. The results came from Eastern culture only. Perhaps future research on the Western cultural aspect with a three-generation

analysis can give a different view. Secondly, intimacy was considered an emotional aspect. For future research, brand, love or brand attachment can be further introduced to understand the behaviour of the consumers. Thirdly, the study was from the consumers of three generations. For future reference, the study can be done between different retailers' types, from small to medium, in the gamification system. Finally, future research can be between two or three countries where such mobile payment services with gamification are available to get more valuable insights.

References

- Abbasi, A.Z., Alqahtani, N., Tsotsou, R.H., Rehman, U. and Ting, D.H. (2023), "ESports as playful consumption experiences: examining the antecedents and consequences of game engagement", *Telematics and Informatics*, Vol. 77, p. 101937.
- Ahmad, H., Butt, A. and Muzaffar, A. (2022), "Travel before you actually travel with augmented reality—role of augmented reality in future destination", *Current Issues in Tourism*, Vol. 26 No. 17, pp. 1-18.
- Ali, F., Zhang, Q., Tauni, M.Z., Butt, A.H. and Ahsan, T. (2023), "Contingent self-esteem, social interaction fears, and compulsive WeChat usage", *Behaviour and Information Technology*, Vol. 42 No. 6, pp. 659-670.
- Al-Sharafi, M.A., Al-Qaysi, N., Iahad, N.A. and Al-Emran, M. (2022), "Evaluating the sustainable use of mobile payment contactless technologies within and beyond the COVID-19 pandemic using a hybrid SEM-ANN approach", *International Journal of Bank Marketing*, Vol. 40 No. 5, pp. 1071-1095.
- Berraies, S., Yahia, K.B. and Hannachi, M. (2017), "Identifying the effects of perceived values of mobile banking applications on customers: comparative study between baby boomers, generation X and generation Y", *International Journal of Bank Marketing*, Vol. 35 No. 6.
- Brunner, M. and Süß, H.-M. (2005), "Analyzing the reliability of multidimensional measures: an example from intelligence research", *Educational and Psychological Measurement*, Vol. 65 No. 2, pp. 227-240.
- Butt, A.H., Ahmad, H., Goraya, M.A.S., Akram, M.S. and Shafique, M.N. (2021a), "Let's play: me and my AI-powered avatar as one team", *Psychology and Marketing*, Vol. 38 No. 6, pp. 1014-1025.
- Butt, A., Ahmad, H., Ali, F., Muzaffar, A. and Shafique, M.N. (2023), "Engaging the customer with augmented reality and employee services to enhance equity and loyalty", *International Journal of Retail and Distribution Management*, Vol. 51 No. 5.
- Butt, A., Ahmad, H., Muzaffar, A., Ali, F. and Shafique, N. (2021b), "WOW, the make-up AR app is impressive: a comparative study between China and South Korea", *Journal of Services Marketing*, Vol. 36 No. 1.
- Cao, X., Yu, L., Liu, Z., Gong, M. and Adeel, L. (2018), "Understanding mobile payment users' continuance intention: a trust transfer perspective", *Internet Research*, Vol. 28 No. 2.
- Chu, S.-C., Lien, C.-H. and Cao, Y. (2019), "Electronic word-of-mouth (eWOM) on WeChat: examining the influence of sense of belonging, need for self-enhancement, and consumer engagement on Chinese travellers' eWOM", *International Journal of Advertising*, Vol. 38 No. 1, pp. 26-49.
- Dijkstra, T.K. and Henseler, J. (2015), "Consistent partial least squares path modeling", *MIS Quarterly*, Vol. 39 No. 2, pp. 297-316.
- Douglas, S.P. and Craig, C.S. (2007), "Collaborative and iterative translation: an alternative approach to back translation", *Journal of International Marketing*, Vol. 15 No. 1, pp. 30-43.
- Duffy, K., Jeyaraj, A., Sethi, V. and Sethi, V. (2021), "Drivers of information technology choice by individuals", *International Journal of Information Management*, Vol. 58, p. 102320.
-

-
- Dzandu, M.D., Hanu, C. and Amegbe, H. (2022), "Gamification of mobile money payment for generating customer value in emerging economies: the social impact theory perspective", *Technological Forecasting and Social Change*, Vol. 185, p. 122049.
- Eckebrecht, F. (2021), "Much ado about nothing? The controversy about the international telecommunication regulations and internet governance", The controversy about the International Telecommunication Regulations and Internet Governance (March 2, 2021).
- Fitz-Walter, Z., Johnson, D., Wyeth, P., Tjondronegoro, D. and Scott-Parker, B. (2017), "Driven to drive? Investigating the effect of gamification on learner driver behavior, perceived motivation and user experience", *Computers in Human Behavior*, Vol. 71, pp. 586-595.
- Fornell, C. and Larcker, D.F. (1981), "Evaluating structural equation models with unobservable variables and measurement error", *Journal of Marketing Research*, Vol. 18 No. 1, pp. 39-50.
- Günther, M., Kacperski, C. and Krems, J.F. (2020), "Can electric vehicle drivers be persuaded to eco-drive? A field study of feedback, gamification and financial rewards in Germany", *Energy Research and Social Science*, Vol. 63, p. 101407.
- Henseler, J., Hubona, G., Ray, P.A.J.I. and Systems, D. (2016), "Using PLS path modeling in new technology research: updated guidelines", *Industrial Management and Data Systems*, Vol. 116 No. 1, pp. 2-20.
- Henseler, J., Ringle, C.M. and Sarstedt, M. (2015), "A new criterion for assessing discriminant validity in variance-based structural equation modeling", *Journal of the Academy of Marketing Science*, Vol. 43 No. 1, pp. 115-135.
- Hsu, C.-L. and Chen, M.-C. (2018), "How gamification marketing activities motivate desirable consumer behaviors: focusing on the role of brand love", *Computers in Human Behavior*, Vol. 88, pp. 121-133.
- Huaman-Ramirez, R., Lunardo, R. and Vasquez-Parraga, A. (2022), "How brand self-disclosure helps brands create intimacy with customers: the role of information valence and anthropomorphism", *Psychology and Marketing*, Vol. 39 No. 2, pp. 460-477.
- Huang, T.-L. and Liu, F.H. (2014), "Formation of augmented-reality interactive technology's persuasive effects from the perspective of experiential value", *Internet Research*, Vol. 24 No. 1.
- Huang, C.-K., Chen, C.-D. and Liu, Y.-T. (2019), "To stay or not to stay? Discontinuance intention of gamification apps", *Information Technology and People*, Vol. 32 No. 6.
- Huotari, K. and Hamari, J. (2017), "A definition for gamification: anchoring gamification in the service marketing literature", *Electronic Markets*, Vol. 27 No. 1, pp. 21-31.
- Hwang, S., Lee, M., Park, E. and del Pobil, A.P. (2021), "Determinants of customer brand loyalty in the retail industry: a comparison between national and private brands in South Korea", *Journal of Retailing and Consumer Services*, Vol. 63, p. 102684.
- Iman, N. (2018), "Is mobile payment still relevant in the fintech era?", *Electronic Commerce Research and Applications*, Vol. 30, pp. 72-82.
- Jiang, Y., Ahmad, H., Butt, A.H., Shafique, M.N. and Muhammad, S. (2021), "QR digital payment system adoption by retailers: the moderating role of COVID-19 knowledge", *Information Resources Management Journal (IRMJ)*, Vol. 34 No. 3, pp. 41-63.
- Kang, H.J., Shin, J.-h. and Ponto, K. (2020), "How 3D virtual reality stores can shape consumer purchase decisions: the roles of informativeness and playfulness", *Journal of Interactive Marketing*, Vol. 49 No. 1, pp. 70-85.
- Kim, M., Song, D. and Jang, A. (2021), "Consumer response toward native advertising on social media: the roles of source type and content type", *Internet Research*, Vol. 31 No. 5.
- Klapzstein, S. and Cipolla, C. (2016), "From game design to service design: a framework to gamify services", *Simulation and Gaming*, Vol. 47 No. 5, pp. 566-598.
- Kock, N. (2015), "Common method bias in PLS-SEM: a full collinearity assessment approach", *International Journal of e-Collaboration (Ijec)*, Vol. 11 No. 4, pp. 1-10.
- Koivisto, J. and Hamari, J. (2014), "Demographic differences in perceived benefits from gamification", *Computers in Human Behavior*, Vol. 35, pp. 179-188.

-
- Koivisto, J. and Hamari, J. (2019), "The rise of motivational information systems: a review of gamification research", *International Journal of Information Management*, Vol. 45, pp. 191-210.
- Kow, Y.M., Gui, X. and Cheng, W. (2017), "Special digital monies: the design of Alipay and WeChat wallet for mobile payment practices in China", *Paper presented at the IFIP Conference on Human-Computer Interaction*.
- Kuppelwieser, V.G., Klaus, P., Manthiou, A. and Hollebeek, L.D. (2022), "The role of customer experience in the perceived value-word-of-mouth relationship", *Journal of Services Marketing*, Vol. 36 No. 3, pp. 364-378.
- Leclercq, T., Hammedi, W. and Poncin, I. (2018), "The boundaries of gamification for engaging customers: effects of losing a contest in online co-creation communities", *Journal of Interactive Marketing*, Vol. 44, pp. 82-101.
- Li, L. (2022), "Digital transformation and sustainable performance: the moderating role of market turbulence", *Industrial Marketing Management*, Vol. 104, pp. 28-37.
- Lien, C.H. and Cao, Y. (2014), "Examining WeChat users' motivations, trust, attitudes, and positive word-of-mouth: evidence from China", *Computers in Human Behavior*, Vol. 41, pp. 104-111.
- Lissitsa, S. and Laor, T. (2021), "Baby Boomers, Generation X and Generation Y: identifying generational differences in effects of personality traits in on-demand radio use", *Technology in Society*, Vol. 64, p. 101526.
- Martínez-López, F.J., Li, Y., Liu, H. and Feng, C. (2020), "Do safe buy buttons and integrated path-to-purchase on social platforms improve users' shopping-related responses?", *Electronic Commerce Research and Applications*, Vol. 39, p. 100913.
- Meng, F., Guo, X., Peng, Z., Ye, Q. and Lai, K.-H. (2021), "Trust and elderly users' continuance intention regarding mobile health services: the contingent role of health and technology anxieties", *Information Technology and People*, Vol. 35 No. 1.
- Mobarak, A.M.A., Dakrory, M.I., Elsouhy, M.M., Ghonim, M.A. and Khashan, M.A. (2022), "Drivers of mobile payment services adoption: a behavioral reasoning theory perspective", *International Journal of Human-Computer Interaction*, pp. 1-14.
- Müller-Stewens, J., Schlager, T., Häubl, G. and Herrmann, A. (2017), "Gamified information presentation and consumer adoption of product innovations", *Journal of Marketing*, Vol. 81 No. 2, pp. 8-24.
- Mumtaz, M.U.M., Ahmed, M. and Ali, S.A. (2021), "How does team cohesion work in textiles of Pakistan? Understanding the underling mechanism of psychological capital and employee commitment", *KASBIT Business Journal*, Vol. 14 No. 4, pp. 114-137.
- Oyman, M., Bal, D. and Ozer, S. (2022), "Extending the technology acceptance model to explain how perceived augmented reality affects consumers' perceptions", *Computers in Human Behavior*, Vol. 128, p. 107127.
- Patil, P., Tamilmani, K., Rana, N.P. and Raghavan, V. (2020), "Understanding consumer adoption of mobile payment in India: extending Meta-UTAUT model with personal innovativeness, anxiety, trust, and grievance redressal", *International Journal of Information Management*, Vol. 54, p. 102144.
- Petrovčić, A., Slavec, A. and Dolničar, V. (2018), "The ten shades of silver: segmentation of older adults in the mobile phone market", *International Journal of Human-Computer Interaction*, Vol. 34 No. 9, pp. 845-860.
- Prasad, S., Garg, A. and Prasad, S. (2019), "Purchase decision of generation Y in an online environment", *Marketing Intelligence and Planning*, Vol. 37 No. 4.
- Prestopnik, N., Crowston, K. and Wang, J. (2017), "Gamers, citizen scientists, and data: exploring participant contributions in two games with a purpose", *Computers in Human Behavior*, Vol. 68, pp. 254-268.
- Rouibah, K., Lowry, P.B. and Hwang, Y. (2016), "The effects of perceived enjoyment and perceived risks on trust formation and intentions to use online payment systems: new perspectives from an Arab country", *Electronic Commerce Research and Applications*, Vol. 19, pp. 33-43.

-
- Sandel, T.L. and Wang, Y. (2022), "Selling intimacy online: the multi-modal discursive techniques of China's Wanghong", *Discourse, Context and Media*, Vol. 47, p. 100606.
- Shams, G., Rehman, M.A., Samad, S. and Oikarinen, E.-L. (2020), "Exploring customer's mobile banking experiences and expectations among generations X, Y and Z", *Journal of Financial Services Marketing*, Vol. 25 Nos 1/2, pp. 1-13.
- Sigov, A., Ratkin, L., Ivanov, L.A. and Xu, L.D. (2022), "Emerging enabling technologies for Industry 4.0 and beyond", *Information Systems Frontiers*, pp. 1-11.
- Su, J. and Tong, X. (2021), "Catching silver consumers in China: an integrated model of Chinese older adults' use of social networking technology", *Asia Pacific Journal of Marketing and Logistics*, Vol. 33 No. 9.
- Sun, Y., Xue, W., Bandyopadhyay, S. and Cheng, D. (2022), "WeChat mobile-payment-based smart retail customer experience: an integrated framework", *Information Technology and Management*, Vol. 23 No. 2, pp. 1-18.
- Taipale, S., Oinas, T. and Karhinen, J. (2021), "Heterogeneity of traditional and digital media use among older adults: a six-country comparison", *Technology in Society*, Vol. 66, p. 101642.
- Tangsupwattana, W. and Liu, X. (2018), "Effect of emotional experience on symbolic consumption in Generation Y consumers", *Marketing Intelligence and Planning*, Vol. 36 No. 5.
- Tao, M., Nawaz, M.Z., Nawaz, S., Butt, A.H. and Ahmad, H. (2018), "Users' acceptance of innovative mobile hotel booking trends: UK vs. PRC", *Information Technology and Tourism*, Vol. 20 Nos 1/4, pp. 9-36.
- Thangavel, G., Memedi, M. and Hedström, K. (2022), "Customized information and communication technology for reducing social isolation and loneliness among older adults: scoping review", *JMIR Mental Health*, Vol. 9 No. 3, p. e34221.
- Trivedi, S.K. and Yadav, M. (2020), "Repurchase intentions in Y generation: mediation of trust and e-satisfaction", *Marketing Intelligence and Planning*, Vol. 38 No. 4.
- van der Zeeuw, A., van Deursen, A.J.A.M. and Jansen, G. (2022), "The orchestrated digital inequalities of the IoT: how vendor lock-in hinders and playfulness creates IoT benefits in every life", *New Media and Society*, p. 14614448221138075.
- Wang, X., Butt, A.H., Zhang, Q., Ahmad, H. and Shafique, M.N. (2021a), "Intention to use AI-powered financial investment robo-advisors in the M-banking sector of Pakistan", *Information Resources Management Journal (IRMJ)*, Vol. 34 No. 4, pp. 1-27.
- Wang, X., Butt, A.H., Zhang, Q., Shafique, M.N., Ahmad, H. and Nawaz, Z. (2020), "Gaming avatar can influence sustainable healthy lifestyle: be like an avatar", *Sustainability*, Vol. 12 No. 5, p. 1998.
- Wang, X., Butt, A.H., Zhang, Q., Shafique, N. and Ahmad, H. (2021b), "Celebrity avatar" feasting on in-Game items: a gamers' play arena", *SAGE Open*, Vol. 11 No. 2, p. 215824402111015716.
- Wong, D., Liu, H., Meng-Lewis, Y., Sun, Y. and Zhang, Y. (2021), "Gamified money: exploring the effectiveness of gamification in mobile payment adoption among the silver generation in China", *Information Technology and People*, Vol. 35 No. 1.
- Yuan, S., Liu, L., Su, B. and Zhang, H. (2020), "Determining the antecedents of mobile payment loyalty: cognitive and affective perspectives", *Electronic Commerce Research and Applications*, Vol. 41, p. 100971.
- Zeng Skovhøj, F.H. (2021), "Managing everyday communication with strong, weak, and latent ties via WeChat: availability, visibility, and reciprocal engagement", *Mobile Media and Communication*, Vol. 9 No. 3, p. 2050157920982322.
- Zhong, Y., Oh, S. and Moon, H.C. (2021), "Service transformation under industry 4.0: investigating acceptance of facial recognition payment through an extended technology acceptance model", *Technology in Society*, Vol. 64, p. 101515.

About the authors

Asad Hassan Butt holds a PhD in marketing from Dongbei University of Finance and Economics in Dalian, China, and a master's degree in advertising and marketing from the University of Leeds in Leeds, England. With over 10 years of teaching experience in reputable Pakistani universities, he has also been involved in student training developments. He has published numerous papers in international journals with high impact factors, and his research interests encompass a range of topics such as augmented reality, artificial intelligence, metaverse, neuromarketing, brand loyalty, gaming avatars and digital marketing. Currently, he serves as an Assistant Professor and Head of Department for Marketing, Operations and Supply Chain at the University of Central Punjab in Lahore, Pakistan.

Hassan Ahmad earned his BS degree in commerce from the Islamia University of Bahawalpur in Punjab, Pakistan, followed by an MPhil degree in business administration from The National College of Business Administration and Economics in Lahore, Punjab, Pakistan in 2016. He later obtained his PhD in business management from Dongbei University of Finance and Economics in Dalian, P.R. China. From 2013 to 2016, he served as a visiting faculty member at the Islamia University of Bahawalpur in Punjab, Pakistan. His research interests are focused on strategic management, financial management, FinTech and information technology in business, and he has made significant contributions to various SSCI journals. Currently, he is an Assistant Professor at the University of Okara in Okara, Pakistan. Hassan Ahmad is the corresponding author and can be contacted at: hassaan1214@hotmail.com

Asif Muzaffar currently serves as a Lecturer of operations and logistics management at Birmingham City Business School, Birmingham City University, England. He has vast teaching and research experience. His research domain includes supply chain integration, consumer behaviour and retailing services. He is currently working on research projects also in the field of supply chain management. He received his PhD in the field of supply chain management from HUST, China.

Waseem Irshad currently serves as a Principal Lecturer at the University of Central Punjab, Pakistan. He has vast teaching experience in the field of marketing. His research interests include digital marketing, disruptive technologies and consumer behaviour. He is currently pursuing his PhD in the field of marketing from HUST, China. His research interests include e-commerce, branding, tourism, social media marketing and consumer behaviour.

Muhammad Usman Mumtaz currently serves as a senior lecturer at the University of Central Punjab, Pakistan. He has vast teaching experience in the field of marketing and management. His research interests include customer engagement, leadership and consumer behaviour. He is currently pursuing his PhD in the field of marketing cum management from Bahria University, Pakistan. His research interests include employee branding, internal marketing, consumer behaviour and digital marketing.

Talha Zubair Ahmad Khan is serving as a permanent faculty member in the Department of Management and Entrepreneurship, Faculty of Management Sciences at UCP Business School, University of Central Punjab. Having started his professional career in management education very early, Talha Zubair Ahmad Khan holds a teaching experience of more than 10 years in some of the renowned higher education institutions in Pakistan. Talha Zubair Ahmad Khan has expertise in teaching excellence from George Mason University, Fairfax, USA, under the "Collaboration for Faculty Excellence in Teaching and Research" programme. His research interests include organizational resilience, entrepreneurial orientation, technological innovation, organizational leadership, strategic management, small and medium-sized businesses, resource-based view and dynamic capabilities development.

For instructions on how to order reprints of this article, please visit our website:

www.emeraldgrouppublishing.com/licensing/reprints.htm

Or contact us for further details: permissions@emeraldinsight.com