ENHANCING CONSUMER VALUE CO-CREATION THROUGH SOCIAL COMMERCE FEATURES IN CHINA'S RETAIL INDUSTRY

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ABSTRACT

Aim/Purpose	Based on the stimulus-organism-response (SOR) model, the current study investigated social commerce functions as an innovative retailing technological support by selecting the three most appropriate features for the Chinese online shopping environment with respective value co-creation intentions.
Background	Social commerce is the customers' online shopping touchpoint in the latest retail era, which serves as a corporate technological tool to extend specific customer services. Although social commerce is a relatively novel platform, limited theoretical attention was provided to determine retailers' approaches in employing relevant functions to improve consumer experience and value co-creation.
Methodology	A questionnaire was distributed to Chinese customers, with 408 valid questionnaires being returned and analyzed through Structural Equation Modeling (SEM).

Contribution	The current study investigated the new retail concept and value co-creation from the consumer's perspective by developing a theoretical model encompassing new retail traits and consumer value, which contributed to an alternative theoretical understanding of value creation, marketing, and consumer behaviour in the new retail business model.
Findings	The results demonstrated that value co-creation intention was determined by customer experience, hedonic experience, and trust. Simultaneously, the three factors were significantly influenced by interactivity, personalisation, and sociability features. Specifically, customers' perceptions of the new retail idea and the consumer co-creation value were examined. Resultantly, this study constructed a model bridging new retail characteristics with consumer value.
Recommendations for Practitioners	Nonetheless, past new retail management practice studies mainly focused on superficial happiness in the process of human-computer interaction, which engendered a computer system design solely satisfying consumers' sensory stimulation and experience while neglecting consumers' hidden value demands. As such, a shift from the subjective perspective to the realisation perspective is required to express and further understand the actual meaning and depth of consumer happiness.
Recommendations for Researchers	New retailers could incorporate social characteristics on social commerce platforms to improve the effectiveness of marketing strategies while increasing user trust to generate higher profitability.
Impact on Society	The new retail enterprises should prioritise consumers' acquisition of happiness meaning and deep experience through self-realisation, cognitive improvement, identity identification, and other aspects of consumer experiences and purchase processes. By accurately revealing and matching consumers' fundamental perspectives, new retailers could continuously satisfy consumer requirements in optimally obtaining happiness.
Future Research	Future comparative studies could be conducted on diverse companies within the same industry for comprehensive findings. Moreover, other underlying factors with significant influences, such as social convenience, group cognitive ability, individual family environment, and other external stimuli were not included in the present study examinations.
Keywords	new retail, social commerce features, consumer value co-creation, stimulus-organism-response (SOR) model

INTRODUCTION

Retail formats are constantly changing to keep up with technological progress (Shamim et al., 2022). New retail also recognises this and uses social commerce as the touch point of new retail online shopping (Akram et al., 2021; Pham et al., 2022). The concept of new retail for the first time at an internet conference triggered a boom in China's retail business (Mu, 2020; Tan & He, 2019). Integrating or interconnecting online and offline purchases through cloud technology, big data, the Internet of Things, and other constructions of the digital economy era and customer engagement strategies, is called new retail (Ali & Johl, 2023a; Jiang et al., 2018). These new technology-based advancements have created an opportunity for retail service providers to adopt a more customer-centric approach by engaging them in co-creation initiatives (Kaartemo & Känsäkoski, 2018; Shamim et al., 2022).

In the last few years, digital platforms have changed the paradigms of consumer behaviour rapidly. Online tools and communication channels have facilitated the concept of co-creation in service ideation and development (Siddique et al., 2021). Co-creation, on the other hand, involves customer engagement in value creation dynamics through service design, new service ideations changing the online consumer environments, and opportunities to co-develop new service designs (Chandler & Lusch, 2015). Prior studies that have largely been working both in terms of conceptual and qualitative outcomes associate co-creation with customisation of new service offerings, reduction of service costing, and reduced service failure-market risk (Virlée et al., 2020). Moreover, other schools of thought have associated the concept of value co-creation in relation to service innovation to better-fit customer needs by empowering them in service co-production mechanisms (Silva et al., 2021; Vargo & Akaka, 2012; Vargo & Lusch, 2014). Additionally, the impact of social commerce as a technology support system in online shopping has been demonstrated in experimental studies (Cheng et al., 2022; Fang & Li, 2020; H. Han et al., 2018). It is noted by Meilatinova (2021) that specialised social commerce elements, such as interactive, personalised referral methods for customers, and reviews provide useful information that has a significant impact on customer behaviour and purchasing decisions (B. S. Zhang et al., 2022). These functions have already influenced how people process information and thus play an instrumental role in the consumer's decision-making process when buying from new retail. In social commerce, customers create value by interacting with firms and other customers to discuss product design, manufacturing, and consumption (M. Han & Xu, 2021).

E-commerce and social commerce are two different concepts, although they are related to online buying and selling. E-commerce refers to the buying and selling of goods or services through electronic means, primarily via the internet. It includes any type of commercial transaction conducted through the internet, such as online shopping, online banking, and online ticketing. E-commerce typically involves a transactional website where customers can browse and purchase products or services (Esmaeili & Hashemi, 2019). Social commerce, on the other hand, is a subset of e-commerce that involves buying and selling products or services through social media platforms. Social commerce leverages social media networks to promote products or services and facilitate transactions. It combines the social networking features of social media with e-commerce functionality, allowing users to purchase products directly within the social media platform (Esmaeili & Hashemi, 2019). For example, a business can create a social media post featuring a product and allow users to purchase it directly through the social media platform without leaving the app. However, despite an important debate regarding the eminent role of value co-creation in online retailing (Celuch & Walz, 2023), less is explored regarding the reasons for customers' participation to promote value co-creation through social commerce features and customers' internal states in new retail paradigms (Nadeem et al., 2021; Wallace et al., 2022). These facets of using technology-based value-added initiatives are missing and warrant further attention and consideration (Ali et al., 2022; Hussain et al., 2022; Shamim et al., 2022) leading to the formulation of the following research question:

> How do social commerce features and customers' internal states help promote the value co-creation initiatives in new retail?

To address these gaps and answer this question, this study aims to provide a conceptual model to explain consumers' value co-creation buying behaviour based on the Stimulus-Organism-Response (SOR) model (Gotmare, 2022). The SOR model has been widely used in recent marketing and tourism literature (Carlson et al., 2018; Kamboj et al., 2018; Kim et al., 2020) to illustrate the relationship between external influences (i.e., stimulus) and consumers' internal processes (i.e., organism) responding to the stimulus, and the resulting consumer behaviour (i.e., responses). New retailers can use social commerce to deepen their ties with their partners, maintain stronger relationships with clients, accurately forecast market trends, and uncover new business prospects, among other things. By studying the impact of new retail, and social commerce features on consumer experience, the meaning and depth of its expression will be more conducive to understanding the true meaning of the concept of co-creation of value.

This study contributes to the body of value co-creation, social commerce, and new retail paradigms in the following ways. First, this study has used an overarching lens of the SOR model to conceptualize that social commerce is an emerging consideration of many retail service firms. However, its eminent implementation to cater to the customers' internal states has been less explored. This study has enhanced the understanding by incorporating different factors of social commerce which would affect the customers' internal states in terms of individual consumer online experience and their hedonic experience in a positive way. These positive and favourable online service encounters drive the customers' attention positively to cater to and lead their personal intentions to engage valuable service ideas with the new retail dynamics, thus encouraging a positive online value co-creation behaviour in new retail. Second, this study has proposed an important factor in online new retail by advocating that trust is an important factor along with customers' experience that is relying on different social encounters in online new retail. Customers are using the latest technology-based applications to increase their sociability which would affect their ability to develop a favourable level of trust with the new retail. The favourable customer trust would contribute to developing a healthy service exchange between retail firms and their customers, thus promoting favourable value co-creation outcomes. Finally, this study has provided practical insights for new retail managers to effectively use social commerce platforms to bridge the customers' internal state in terms of positive individual and hedonic experiences. Further, these implementations will help the retail managers to build strong online trust among the customers of new retail that would end up bridging strong co-creation ties between new retail firms and their customers.

LITERATURE REVIEW

NEW RETAIL ERA

New retail refers to integrating or interlinking online and offline shopping using modern technologies, data, and customer engagement techniques (Jiang et al., 2018). From the consumers' perspective, the new retail model aims to focus on consumers, promote the transformation of the retail ecosystem, and attend to consumers' needs in an all-around way through the integration of online and offline complementary service experiences (Li et al., 2021). The emergence of new retail is mainly based on the continuous development of the technology network infrastructure and constant upgrading of consumption from the industrial chain (Lei et al., 2020). The new retail model is a comprehensive upgrade of the existing technology network. The new online and offline stores offer e-commerce convenience of purchasing at any time, and the characteristics of social commerce, such as sociability and interactivity, permeate the whole shopping process for consumers (Mu, 2020).

THE STIMULUS-ORGANISM-RESPONSE (SOR) MODEL

The Stimulus-Organism-Response (SOR) model, which derives from environmental psychology and is also known as the environmental stimulation-body-response model, involves the body responding to an external stimulus. This paradigm proposes that external stimuli in the environment will change the internal condition of the human body, subsequently impacting the body's behavioural reaction. SOR is a theoretical framework used in social psychology to understand how external stimuli affect an individual's internal state and behaviour. It is one of the many approaches used in psychology and has unique features that distinguish it from other approaches. Many studies have used the SOR framework in retailing area (Ürgüplü & Yumurtacı Hüseyinoğlu, 2021). In the context of retail sales, Donovan et al. (1994) were among the first to apply the SOR model in studying consumer behaviour. Bitner (1992) proposed a theoretical model framework based on the SOR theory for understanding the "physical environment-consumer behaviour relationship" in service organisations. This viewpoint clarifies the influence of consumers' intrinsic psychological factors on consumer behaviour and better explains the mechanisms and paths of consumer behaviour formation.

The SOR approach is a useful framework for understanding the complex interplay between external stimuli, internal mental processes, and behaviour. It takes into account both the environment and the individual's internal state, making it a valuable approach in social psychology. Since this study focuses on customers' perceptions, experiences, and behaviours, the social commerce features here refer to the subjective properties of new retailing as a stimulus acting upon the customers. Previous studies on social commerce have confirmed that the technological features of social commerce platforms cluster around three crucial elements: interactivity, personalisation, and sociability (Lin et al., 2019; Pfiffelmann et al., 2020). In combination with the marketing characteristics of new retail, this study chooses consumer experience (technological experience, hedonic experience, and sociability experience) based on Hauffe experience design as the internal state of consumer behaviour. In new retail, customers are viewed as co-creators, not merely consumers of products. The actual purchase is seen as only one link in a continuous customer experience from conception to consumption to referral (Hussain et al., 2022; Li et al., 2021). This study views value co-creation and purchase intention as responses to our developed model.

EXTRINSIC MOTIVATION

Extrinsic motivation involves participating in contextual activities with associated effects, such as obtaining rewards and improving community reputation (Ryan & Deci, 2000). Extrinsic motivation is distinct from intrinsic motivation, which emerges within an individual by being solely concerned with external rewards (Abbasi et al., 2022). The new retail enterprises could enhance external incentives to boost user engagement by manipulating the environment. Research on the impact of various extrinsic motivation categories in the new retail environment remains in the infancy stage, with only limited findings (H. Zhang et al., 2021). As such, the current study appraised consumers' external motivation in seeking an enhanced shopping experience in the new retail era.

VALUE CO-CREATION

Value co-creation generally refers to the interaction and collaboration mechanisms between service providers and customers, thereby resulting in received experienced values (Abid et al., 2022; Grönroos, 2011; Ranjan & Read, 2016; Rubio et al., 2021). The term was initially posted as a marketing strategy, wherein enterprises should encourage customers' participation in collaborative design, development, and production (Hussain et al., 2023). With the new retail era advancing the consumer-centric concept and innovative practices, consumers are more deeply involved in the retail industrial value chain, which produces a large value co-creation potential (L. Zhang et al., 2021).

THEORETICAL FRAMEWORK AND HYPOTHESES DEVELOPMENT

SOCIAL COMMERCE FEATURES

Social commerce is a technology-enabled environment where consumers can interact through social shopping activities, such as product searches, product information sharing and aggregation, and collaborative decision-making (Fang & Li, 2020). These social features present unique and exciting capabilities for online shopping (Marone & Rodriguez, 2019; Mazhar, Nadeem, et al., 2022). New retail leverages various technologies and social characteristics to dominate the interaction process with consumers and takes their experience as the key to improving consumers' shopping experience. The following literature review table (Table 1) highlights the key features of social commerce and value co-creation in the context of e-commerce. Social commerce is characterised by the integration of social media and e-commerce, which enables businesses to reach customers through targeted product recommendations and promotions (Mazhar, Ting, Hussain, et al., 2022). Additionally, customers can share their purchases with their social networks, providing social proof and encouraging further purchases. Value co-creation is another important aspect of social commerce, where businesses and customers collaborate to create value through shared experiences, ideas, and knowledge. This can lead to

increased customer satisfaction, loyalty, and advocacy, as well as innovation and new product development. Table 1 provides a comprehensive overview of the literature on social commerce and value co-creation, highlighting the various features and benefits associated with these concepts and the specific features of social commerce.

Table 1. Specific social commerce features

Source	Independent	Dependent	Finding
H. Zhang et al. (2018)	Perceived personalisation and perceived sociability	Social commerce intention	Social presence and social support positively influence social commerce intention.
Maia et al. (2018)	Social commerce characteristics	Purchase intention	Communication positively impacts consumer trust in social commerce.
Pratama et al. (2020)	Self-congruence, social norms, information quality, and interactivity	Brand loyalty	Interactivity positively impacts relationship quality.
Wang and Herrando (2019)	Informativeness, image appeal, interactivity, and social presence	Repost intention	Perceived hedonic value positively affects the intention to repost the message.
Lin et al. (2019)	Interactivity, stickiness, and word of mouth	Swift guanxi (Online marketplace)	Interactivity, stickiness, and word of mouth respectively exert positive effects on mutual understanding, reciprocal favour, and relationship harmony.

Interactivity

Interactivity is the communication process between humans and computer software (Kiousis, 2002) due to the core of new retail being consumers. The interactivity of the new retail model is centred on consumers and the approaches to constructing an interactive closed-loop system with other elements, including goods, shop assistants, brands, and peers in various scenarios (Shankar et al., 2021). The interaction occurs offline and online in every life aspect outside the retail circumstance. Moreover, the ability to interact with customers is a critical new retailing feature (Mazhar, Ting, Abbasi, et al., 2022), which depends on consumers' participation degrees in offline and online shopping activities, before subsequently generating and sharing information to achieve a mutual consensus within a new retail environment.

Personalisation

Personalisation is a technique generating relevant and distinctive communication between two parties to maximise the recipient's experience (Eirinaki & Vazirgiannis, 2003), which could be performed by customising an experience or message to a specific individual based on the acquired information of a particular individual. The term generally describes various customisation strategies, which aim to satisfy different consumers' specific needs by analysing consumer consumption trends with respective characteristics, preferences, and habits. Resultantly, exclusive and heterogeneous services and experiences would be provided (Winter et al., 2021).

Sociability

Sociability is defined as offline consumers' interactions and experiences in the new retail processes at various social contact and societal support levels. Similarly, sociability is the circumstantial capability to foster the emergence of social interaction and create a stable social space for cooperative activities (Kreijns et al., 2003). Correspondingly, consumers with similar interests could recommend various services and reviews to other consumers (Su, 2020). For example, customers could establish relationships and develop social networks with sufficient social support, amicable friendship, and intimacy in the offline community. Along with the Chinese community retail channel integration and development, lower investment costs and shorter maturity community retail business progress would serve as vital pillars to support industrial growth (Wang & Xu, 2021). Eventually, the community would transform into a significant mainstream offline entrance to new retail.

HYPOTHESES DEVELOPMENT

Social commerce features and customer internal states

New retail applies various technologies and social characteristics to prioritise the consumer interaction process and integrate consumer experiences for essential shopping experience improvement (L. Liang & Pan, 2021). The SOR model postulates that interaction, personalisation, and social commerce engagement would act as environmental stimuli influencing consumer experience, wherein the interactivity of social commerce could facilitate consumer interaction with one another on a specific platform, such as through photo evaluations or by answering questions (Kao et al., 2020). Specifically, consumers could generate supportive information and more diversified information support for subsequent customers when coupled with the inherent knowledge regarding the employed platform (Costello & Reczek, 2020). Therefore, commodity information is rendered transparent to allow customers to perform accurate consumption judgments (Pop et al., 2021).

Customer requirements for fantasies, sentiments, and hedonic experiences could be satisfied by website interactivity (Islam et al., 2021; Siddique et al., 2021), in which retailers could incorporate interactive technologies to simulate the in-store experience in the new retail. By introducing interactive controls and enhanced web design tools, features, and technological capabilities, a business could develop online storefronts with a similar appearance and atmosphere to physical equivalents (Kalia & Paul, 2021) that would benefit consumers' overall purchasing experiences (Alalwan et al., 2020; Mazhar & Ting, 2021). Accordingly, the new retail could replicate the physical store atmosphere by including interactive elements adequately, with the online store as an alternative shopping platform (Riegger et al., 2021). Simultaneously, image manipulation and product review tools could provide buyers with necessary information about relevant products, thereby increasing the purchase likelihood on the website (Batheja, 2020). Hence, a relevant hypothesis was posited:

> **Hypothesis 1**: Interactivity positively correlates with the customer experience in the new retail era.

Personalisation would induce consumer purchase inclination depending on the service offered (Shanahan et al., 2019). New retailers require a large amount of personal and private information from clients to customise pertinent services. Although retailers strive to resolve consumer problems comprehensively, clients may pronounce conflicting feelings regarding retailers' approaches and services (Pfiffelmann et al., 2020). Previous academicians discovered that consumers prefer purchasing online (Barari et al., 2020), wherein Y. Liang et al. (2019) argued that online providers should anticipate consumers' positive attitudes when obtaining customised services owing to personalisation inherently eliciting positive emotions. Thus, this study proposed a relevant hypothesis:

> **Hypothesis 2:** Personalisation is positively associated with hedonic experience in the new retail era.

Sociability denotes the human touch perceivable on the website, such as the possibility of interaction (Pereira et al., 2020), friendliness, and belongingness (Bawack et al., 2021). Sociability reflects the online buyers' awareness that respective interaction partners are present, with a higher sociability degree leading to elevated positive perceptions of the online store (Lieberman & Schroeder, 2020). Due to the consumer-centric nature, new retail is considered a social business, which would increase consumers' offline social interaction (sociability) by producing more intense emotions and feelings of trust, belongingness, and warmth between new retail customers or friends (Mu, 2020). Sociability connects new retail customers and creates a sense of social presence, which assists consumers to purchase products via mutual influences and discuss personal notions to gain a sense of self-worth or self-efficacy. Therefore, a relevant hypothesis was postulated:

> **Hypothesis 3**: Sociability positively correlates with trust in the new retail era.

The value co-creation framework encompasses the customers' transformation from passivity to continuous and active engagement (Falkenreck & Wagner, 2022; Prahalad & Ramaswamy, 2004). Quach and Thaichon (2017) propounded that consumer participation commences before receiving the provided services, wherein corporations employ pertinent strategies to integrate consumers' purchase experience with co-created and personalised value, which would elevate consumer loyalty. Similarly, Bagherzadeh et al. (2020) identified customers' co-creation process during service recovery. As such, consumer participation in new retail services would clarify the customer's role in enhancing future perceived co-creation values, co-creation intentions, and subsequently consumer satisfaction. Hence, the present study hypothesised as follows:

> **Hypothesis 4**: Consumer experience is positively associated with new retail value co-creation.

Past empirical investigations demonstrated a favourable relationship between store features and consumers' emotional states of satisfaction in the retail sector (Hashmi et al., 2020). Furthermore, the satisfaction obtained from external stimuli and activities was generated from an individual's inherent interest in the participated activities (So et al., 2021). With the increasing prominence of new retail personalisation, consumers' identities and value consciousness are gradually gratified (L. Zhu et al., 2020), which suggests that hedonic experience is integral to establishing positive attitudes and behavioural intentions (Shahid & Paul, 2021). Thus, this study hypothesised as follows:

> **Hypothesis 5:** Hedonic experience positively correlates with new retail value co-creation.

Trust is a prerequisite for collaboration and teamwork in social contact, relationship viability, and dedication to creating close relationships (Raza et al., 2020) by being prepared to rely on a trusted exchange partner (Cook & Santana, 2020) to reduce uncertainty and risk. Customer service providers should manifest sufficient trust for consumers to share personal opinions, efforts, and ideas without the fear of negative consequences. Meanwhile, See-To and Ho (2014) posited the relationship between trust and value generation in social networking platforms was complicated as consumer confidence in products would significantly impact value co-creation (Shulga et al., 2021), which postulated that new retail customers' participation in value co-creation was contingent on the trust degree. Therefore, a relevant hypothesis was developed. Finally, all the hypotheses are shown in Figure 1.

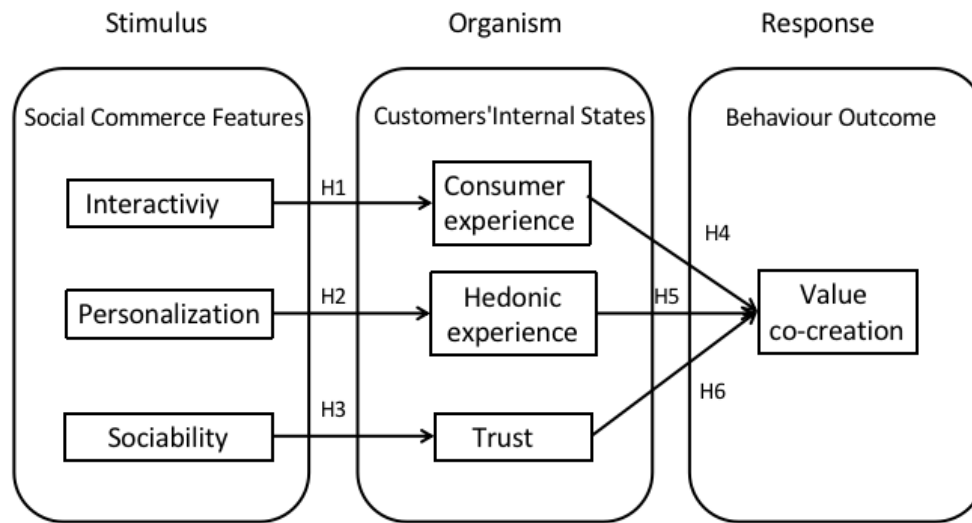> **Hypothesis 6**: Trust is positively associated with new retail value co-creation.

Figure 1. Theoretical framework

METHODOLOGY

SAMPLE AND DATA COLLECTION

Freshippo has opened 321 outlets in China as of 21 October 2020, spanning 16 provinces and 24 cities (Yang & Peng, 2021). According to Statista (2022), Freshippo, also known as Hema, is a Chinese fresh commerce platform owned by the Alibaba Group. As of July 2022, it had 61.2 million monthly active users across all platforms in China, making it the largest fresh commerce service provider in the country. The platform offers online and offline grocery shopping, with a focus on fresh produce and high-quality seafood. Therefore, Hema users were selected as the research objects following screening and comparison.

The instrument was made based on scales that were culled from the existing body of literature. The questionnaire has 35 items. In order to ensure that the sample size used fulfilled the necessary condition for the required sample size, the sample size of this study was determined based on a close examination of the existing literature. The general rule of thumb is appropriate to utilize 15 samples for each prediction variable (Memon et al., 2020). The sample size of the present survey is required to be between 350-700. Considering the investigation cost, time limits, and the effective rate of the questionnaire (over 80%), the sample size is determined to be 400.

Data were collected from 408 respondents through online questionnaires. Wu et al. (2022) provided some guidelines to achieve a high response rate. For instance, survey participants' anonymity was better protected when completing online questionnaires. Saleh and Bista (2017) performed an online survey in education research and argued that respondents were more responsive with a 78.9% response rate. According to the respondents' demographic data (as shown in Table 2), the new retail is still developing. The sample selection shows the possibility that respondents have enough disposable income and education to participate in the new retail in the near future.

Table 2. Descriptive statistics (408 respondents)

Demographic Variable		Frequency	Percentage (%)
Gender	Male	221	54.2
	Female	187	45.8
Age	Between 25 and 35 years old	163	40.0
	Between 36 and 45 years old	136	33.3
	Above 45 years old	109	26.7
Education	Junior high school and below	52	12.7
	High or secondary school	108	26.5
	College	92	22.5
	Undergraduate	156	38.2
Career	Freelance	83	20.3
	Corporate staff	122	29.9
	Government / Institution staff	125	30.6
	Private owners / Self-employed	78	19.1
Income	CNY 3000 or less	48	11.8
	CNY 3000 – 4500	145	35.5
	CNY4500 – 6000	96	23.5
	CNY 6000 or more	119	29.2

MEASURES

The structure of the scales was determined by referring to previously used measures. However, in order for it to be applicable to the present study, we made a few minor modifications. The study used a seven-point Likert scale ranging from strongly agree (7) to strongly disagree (1). Five items that centred on the concept of customer and seller interaction were adapted from Lin et al. (2019) to measure interactivity. We used five items used by H. Zhang et al. (2014) to measure customers' personalisation to collaborate in experience. Five items used to measure sociability were adapted from H. Zhang et al. (2014). Five items that measure customers' experience in online retail store was adapted from Tyrväinen et al. (2020). The study adapted five items from Holdack et al. (2020) to measure customers' hedonic experience. Five items measuring customers' trust were adapted from Bart et al. (2005) and Grosso et al. (2020). To measure value co-creation, all the items were adapted from Algharabat (2018) and Taherpour (2021). The research drew on the insights of professionals in the sector, as well as Ph.D. candidates, currently pursuing their studies in China to ensure that the standardised items of measurement were understandable. Developing the measurement items for the study was made much easier with the contributions from both the experts and the candidates for the Ph.D. For the study, a total of seven constructs were used, including three constructions that served as a stimulus for value cocreation and three structures that served as an organism in reaction to stimulation associated with value cocreation.

METHODOLOGICAL INFORMATION AND MODEL DEVELOPMENT

IBM SPSS 25 and Amos 24 statistical software were employed for data analysis. Structural equation modelling (SEM) was conducted to test the relationship between various model variables (Hair et al., 2010), which was highly convenient for developing and extending theories, especially with second- or third-order factors, to provide a deeper understanding of implicit relationships (Astrachan et al.,

2014). Therefore, the SEM technique allows the simultaneous evaluation of various variables and respective relationships, while evaluating the associations between several potential constructs while reducing errors in the model (Hair et al., 2014).

DATA ANALYSIS

COMMON METHOD BIAS

The current study used a 7-point Likert scale to collect data in a single sitting. However, this approach can potentially lead to common method bias, as respondents may tend to provide similar responses due to the context of the survey. To address this concern, statistical remedies were applied to assess the common method variance in the data. Harman's single-factor method was utilized for this purpose. Principal component analysis with varimax rotation was performed in SPSS 25, following the recommendation of Podsakoff et al. (2003). The results of the analysis indicated that a single factor emerged in only 26.72% of the co-variance, which is well below the norm of 50% suggested by Podsakoff et al. (2003). This finding indicates that there is no significant issue of common method bias in the data. Therefore, the results of the study can be considered reliable and valid. Overall, the study took necessary measures to ensure the quality of the data collected. By applying statistical remedies to address common method bias, the study was able to produce reliable results. The findings of the study can be used to make informed decisions and guide future research in the field.

EXPLORATORY FACTOR ANALYSIS (EFA)

This study uses 35 items to explore the drivers of consumers' value co-creation. EFA with Promax rotation was used to identify the number of factors to extract (Hair et al., 2015). Watkins (2018) argued that the Promax rotation method allows the researcher to control the degree of inter-factor correlation. Furthermore, the Promax rotation technique extracts the true number of factors of the population model (Grieder & Steiner, 2022). The main objective of the EFA is to confirm if the items used are loaded correctly to their corresponding constructs. The results broadly support the structure of the measurement model used. Table 3 shows that the EFA exhibited a KMO measure of sampling adequacy of 0.956, and Barlett's test of sphericity for the correlation matrix indicated v2 ¼11717.088 with df ¼595 and p ¼. The factor extraction suggests the existence of seven factors that explain 77.484% of the variance extracted. In Appendix B, Table B1 shows the EFA outcomes and Table B2 highlights the complement extraction through the principal component approach. These results support the existence of seven distinct factors.

Table 3. Sample adequacy analysis

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.956
Bartlett's Test of Sphericity	Approx. Chi-Square	11717.088
	df	595
	Sig.	0.000

VALIDITY AND RELIABILITY OF THE MEASUREMENT MODEL

The model reliability was evaluated via two criteria, namely Cronbach's alpha and composite reliability (CR). Particularly, Cronbach's alpha values of all constructs exceeded the threshold value of 0.7 (Nunnally, 1978), therefore presuming sufficient internal consistency. Meanwhile, confirmatory factor analysis was performed to investigate aggregation validity and discriminant validity, with the fitting results of the model as 2/DF = 1.467, RMSEA = 0.034, CFI = 0.978, TLI = 0.976, GFI = 0.902 conforming to the standard values. Thus, the findings suggested that the model possessed a high fit with the collected data. Table 4 depicts the model fit indices with respective threshold values.

Table 4. Model fit indices

Index	Threshold Value (Hooper et al., 2008)	Study Value
RMSEA	< 0.05	0.034
CFI	> 0.90	0.978
TLI	> 0.95	0.976
GFI	> 0.90	0.902

Note: RMSEA = Root mean square error of approximation, CFI = Comparative fit index, TLI = Tucker-Lewis index, GFI = Goodness-of-fit index

A larger Cronbach's alpha coefficient postulates higher internal consistency of the measurement. The current Cronbach's alpha values of six variables exceeded 0.900, thereby indicating high internal consistency of the measurements. Meanwhile, Cronbach's alpha coefficient of the value co-creation (VCC) variable was between 0.800 and 0.900, which suggested satisfactory internal consistency (see Table 5). Furthermore, the measurement model achieved a satisfactory reliability degree, with Cronbach's alpha coefficients ranging from 0.878 to 0.933, which exceeded 0.850. The loadings of measurement variables were between 0.462 and 0.889 and the composite reliability value range was between 0.887 and 0.933, which was higher than the recommended critical value of 0.700. The convergence validity range was between 0.621 and 0.737 higher than the recommended critical value of 0.5, which also posited acceptable convergence validity of the study variables. Concurrently, Table 5 illustrates average variance extracted (AVE) square root values are higher than the correlation coefficients between variables, which propounded adequate discriminant validity when exogenous and endogenous variables were positively correlated. Discriminant validity would be considered acceptable if the AVE square root value of a construct is greater than the correlation with other potential variables (Fornell & Larcker, 1981). Table 6 depicts that the AVE square root value of each construct is higher than the correlation with other constructs.

Table 5. Convergent validity and reliability

Construct	Item	Loading	Cronbach's α	CR	AVE
Interactivity (IN)	IN1	0.850	0.929	0.929	0.724
	IN2	0.848			
	IN3	0.848			
	IN4	0.852			
	IN5	0.855			
Personalisation (PE)	PE1	0.875	0.933	0.933	0.737
	PE2	0.855			
	PE3	0.870			
	PE4	0.844			
	PE5	0.847			
Sociability (SO)	SO1	0.876	0.931	0.931	0.729
	SO2	0.855			
	SO3	0.845			
	SO4	0.828			
	SO5	0.864			

Construct	Item	Loading	Cronbach's α	CR	AVE
Consumer Experience (CE)	CE1	0.864	0.928	0.929	0.722
	CE2	0.859			
	CE3	0.852			
	CE4	0.839			
	CE5	0.835			
Hedonic Experience (HE)	HE1	0.836	0.930	0.930	0.727
	HE2	0.854			
	HE3	0.835			
	HE4	0.847			
	HE5	0.889			
Trust (TR)	TR1	0.850	0.931	0.931	0.728
	TR2	0.863			
	TR3	0.852			
	TR4	0.857			
	TR5	0.845			
Value Co-creation (VCC)	VCC1	0.862	0.878	0.887	0.621
	VCC2	0.837			
	VCC3	0.851			
	VCC4	0.852			
	VCC5	0.462			

Note: CR = Composite reliability; AVE = Average Variance Extracted

Table 6. Discriminant validity - inter-construct correlation matrix

Variable	IN	PE	SO	CE	HE	TR	VCC
Interactivity (IN)	0.851						
Personalisation (PE)	.468 **	0.858					
Sociability (SO)	.413 **	.389 **	0.854				
Consumer Experience (CE)	.497 **	.513 **	.374 **	0.850			
Hedonic Experience (HE)	.509 **	.453 **	.386 **	.424 **	0.852		
Trust (TR)	.438 **	.452 **	.392 **	.453 **	.380 **	0.853	
Value Co-creation (VCC)	.531**	.480 **	.396 **	.546 **	.501 **	.466 **	0.788

STRUCTURAL MODEL RESULTS

The structural model was examined through the standardised path coefficients as the strength indicator of the relationships between various variables (Wixom & Watson, 2001). The model results are reported in Table 7 and summarised in Figure 2.

Table 7 portrays the estimation results for the structural model, in which the first and second columns indicate the model hypotheses, while the third column reports the standardized estimated coefficients. The fourth, fifth, and sixth columns depict the standard errors (SE), the critical ratio, and the corresponding p-values respectively. Specifically, the estimation results demonstrated that interactivity significantly and positively impacted consumer experience ($\beta = 0.558$, $p < 0.001$), personalisation

positively predicted hedonic experience (β = 0.505, p < 0.001), and sociability positively predicted trust (β = 0.437, p < 0.001) which supported hypotheses H1, H2, and H3. Similarly, consumer experience positively and significantly impacted value co-creation (β = 0.384, p < 0.001), hence supporting hypothesis H4. Simultaneously, hedonic experience (β = 0.292, p < 0.001) and trust (β = 0.219, p < 0.001) positively predicted value co-creation respectively, which supported hypotheses H5 and H6.

Table 7. Estimation results (SEM)

Path	Hypothesis	β	SE	CR	p-value	Decision
IN → CE	H1	0.558	0.050	10.960	< 0.001	Supported
PE → HE	H2	0.505	0.050	9.766	< 0.001	Supported
SO → TR	H3	0.437	0.052	8.459	< 0.001	Supported
CE → VCC	H4	0.384	0.045	7.852	< 0.001	Supported
HE → VCC	H5	0.292	0.045	6.108	< 0.001	Supported
TR → VCC	H6	0.219	0.042	4.674	< 0.001	Supported

Notes. β = Path coefficient, SE = Standard Error; *** p < .001; ** p < .01; * p < .05.
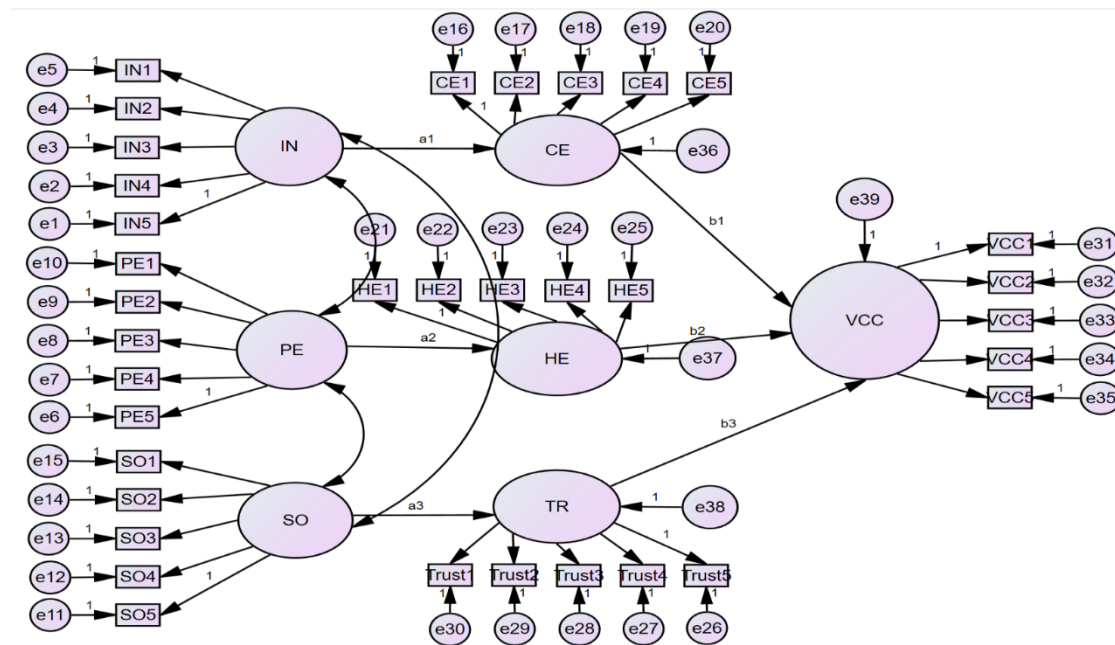
Figure 2. Mediation model

MEDIATION ANALYSIS RESULTS

The AMOS software was employed to analyse the mediation effect with the structural equation with 5,000 bootstrap samples. The mediation effect would be significant when the confidence interval (CI) was above zero (Hair et al., 2014). Table 8 illustrates that consumer experience significantly mediates the relationship between interactivity and value co-creation, with an estimate of 0.214 in a 95% CI (0.134, 0.322). Simultaneously, hedonic experience significantly mediated the association between personalisation and value co-creation, with an estimate of 0.148 in a 95%CI (0.079, 0.237), while trust significantly mediated the relationship between sociability and value co-creation with an estimate of 0.096 in a 95% CI (0.041, 0.174).

Table 8. Bootstrap results of the mediation analysis

Path	Estimate	LLCI	ULCI	p-value
IN → CE → VCC	0.214	0.134	0.322	< 0.001
PE → HE → VCC	0.148	0.079	0.237	< 0.001
SO → TR → VCC	0.096	0.041	0.174	< 0.001

DISCUSSION AND FINDINGS

The results show that interaction has a significant positive impact on consumer experience, which is consistent with the hypothesis of this study. In the second hypothesis of the current study, we proposed that personalisation has a positive effect on the hedonic experience. The results provide statistical support for our hypothesis. According to public data, online sales account for a large proportion of its total revenue, and the efficiency and quality of online interaction are relatively high. Results also showed that sociability has a significant positive effect on customer trust. It is important to consider personalisation when designing a service's infrastructure since it reflects the nature of social commerce platforms and the relationships they foster between businesses and their customers. Specifically, the interaction between humans and machines should fully respect consumers' right to choose, think, and make decisions freely. This requires new retail enterprises to scientifically analyse consumers' consumable content and implementation process and improve the matching degree of system and user needs. Furthermore, the current study also found that all mediated paths were supported (Ali & Johl, 2022, 2023b).

On the one hand, managers can create and guide consumers to share knowledge and further help consumers to get opportunities to show themselves and express themselves through system connections. It helps to enhance consumers' sense of self-competence and purpose of belonging, promoting their sense of personal expression and enjoyment. Different from machine-based human interaction, new retail enterprises should also focus on strengthening consumers' sense of control, a pleasant experience, and a sense of integration in human-computer exchange. Consumers can get a good experience from participating in online activities or using various information technologies.

Empirical research shows that consumer experience, hedonic experience, and trust significantly positively impact value co-creation. An enterprise can also understand the needs and preferences of customers, absorb their opinions or suggestions, improve products and services, and provide products and services that attract customers has a significant positive impact on the improvement of corporate profits. With the rapid development of new retail businesses, customers can complete most of their activities within the app. This also confirms the hypothesis of this paper. Consumer experience, hedonic experience, and trust can be understood as consumers' emotions. Emotion and behavior can be the prerequisite to promoting the formation of customer-co-created value. When customers have enough emotional input, they will be more willing to form co-created value, and customers' behavior will directly enhance their cognition of co-created value. Generally, the higher a customer's cognitive level, the more rational the choice will be. The more original information customers know on social commerce platforms, the more hidden negative information they can learn, affecting customer experience. Trust can enhance customers' perception of the value of products and services and their self-regulation in the interaction process to strengthen value co-creation between customers and retailers (T. Zhu et al., 2022). At the same time, the online interaction between enterprises and consumers can continuously improve the usability, usefulness, and interactivity of retailers' online platforms (Fan et al., 2016). The more customers are aware of available opportunities, the more value can be created (Payne et al., 2008).

THEORETICAL IMPLICATIONS

In this study, we look at the concept of new retail and the value of consumer co-creation from the customers' perspective. A model of the relationship between 'new retail' traits and consumer value is developed in this paper and based on a concrete examination of the new retail structure system and components used to discuss how it affects the value of the client. The current study is extremely important since it will add to the theoretical understanding of value creation, marketing, and consumer behavior in the new retail business model.

Consumers are now more deeply involved in the retail industry's value chain due to the notion of "new retail", which places them at the center of the business. This has the potential to lead to significant value co-creation opportunities. Regarding both traditional retail and e-commerce, value co-creation theory has been widely employed in the research of both sectors. However, there has only been a limited amount of research into the value co-creation activity of new retailers. Consumers' value co-creation in the new retail model may be explored in more depth, which is beneficial for academics and businesses seeking to understand the central position of consumers in the new retail model. It will also shed light on how consumers achieve value co-creation in the current development stage of new retail.

PRACTICAL IMPLICATIONS

New retailers should correctly use online personalisation strategies such as "instant save", "wish list", and "shopping bag", and emphasise the dominant role of "people" in service contact on a reasonable basis. Based on consumer shopping surveys, scientific, rational system function, technical practicability, convenience sign, and technology upgrading iteration, the enterprise should pay attention to the ascension of consumption quality, emphasising making technology (such as artificial intelligence or virtual reality) to provide a better user experience.

From the previous management practice, new retailers mainly focus on the superficial level of happiness in the process of human-computer interaction, resulting in the computer system design guided by this can only meet the sensory stimulation and experience of consumers but ignore the deep-seated value demands of consumers. It is necessary to shift from the subjective perspective to the realisation perspective, and the meaning and depth expressed by the realisation of happiness are more conducive to understanding the real connotation of consumer happiness. Therefore, new retail enterprises need to pay more attention to the acquisition of meaning and deep experience of consumers in self-realisation, cognitive improvement, identity identification, and other aspects of the experience and purchase process. Only by more accurate matching and mining of the fundamental thoughts of consumers can we continue to meet the needs of consumers and experience, and then help consumers better obtain and realise sexual happiness.

CONCLUSION

The present study significantly elevated the understanding of consumers' new retail value co-creation on social commerce platforms, which provides an alternative shopping environment with the mutual establishment of meaningful relationships. Accordingly, this study developed a model to examine the role of social commerce characteristics and consumer sentiment in enhancing firm and consumer value. The findings highlighted the positive impact of consumer experience on value co-creation, with the impact of consumer sociability on value co-creation significantly mediated by trust. In addition, social commerce features significantly influenced consumers' value co-creation, which underscored the importance of consumer experience in new retail by advancing previous research. Thus, new retailers could incorporate sociability characteristics on social commerce platforms to improve the effectiveness of marketing strategies, while increasing user trust to generate higher profitability.

Updated, accurate, and precise marketing strategies are necessary to improve the consumer experience, hedonic experience, and trust to ensure constant value co-creation between customers and corporations. As such, a successful retail business model is beneficial in terms of increasing consumer awareness and organisational revenues, which allows the enterprise to achieve organisational objectives and efficiently attain the stipulated outcomes (Wang & Xu, 2021). Contrastingly, the typical retail commercial framework highly emphasises maximising organisational values without prioritising consumer needs. As customers are active participants with increasingly personalised and diverse personal requirements in the contemporary transaction process, the entire business process requires an alternative consumer attitude as the product co-developer, operator, and value co-creator.

LIMITATIONS AND FUTURE DIRECTIONS

The current study possesses several limitations, as only Hema users were recruited as the study respondents, which limited the study investigations. Future comparative studies could be conducted on diverse companies within the same industry for comprehensive findings. Moreover, other underlying factors with significant influences, such as social convenience, group cognitive ability, individual family environment, and other external stimuli were not included in the present study examinations. In addition, the current findings are based on the new retail context, which results in a specific contribution to the relevant literature without adequate generalisability in other industries. Future research could be extended to different industrial activities, such as manufacturing, to improve products that sufficiently fulfil consumer needs via pertinent corporate design and research and development (R&D) activities.

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APPENDIX A

MEASUREMENT SCALE

Content	Item	Source
Interactivity	1. I feel that I have a lot of control over sellers' stores on the Hema app. 2. I can freely choose what I want to see in stores on the Hema app. 3. Sellers on the Hema app have two-way communication between themselves and visitors. 4. Sellers on the Hema app respond to my questions very quickly. 5. I am able to get information from sellers on the Hema app very rapidly.	Lin et al. (2019)
Personalisation	1. This Hema app can provide me with personalized deals/ads that are tailored to my activity context. 2. This Hema app can provide me with more relevant promotional information that is tailored to my preferences or personal interests. 3. This Hema app can provide me with the kind of deals/ads that I might like. 4. The Hema app stores all my preferences and offers me extra services based on my preferences. 5. The Hema app does a pretty good job of guessing what kinds of things I might want and making suggestions.	H. Zhang et al., (2014)
Sociability	1. I like to shop with my friends or family to socialize in Hema's offline store. 2. I enjoy socializing with other shoppers in Hema. 3. To me, shopping with friends or family is a social occasion in Hema's offline store. 4. Shopping with others is a bonding experience. 5. I like to exchange shopping information with friends in Hema.	H. Zhang et al., (2014)
Consumer Experience	1. When I visit Hema's online and offline retail stores, I get inspiration and new ideas (e.g., store window displays, product displays, and tips from store personnel). 2. Visiting Hema's online and offline retail stores evokes curiosity and a thirst for knowledge (e.g., I want to try new products and services). 3. It is nice to test products in the Hema online and offline retail stores (e.g., offline product demonstrations or using applications in the e-store). 4. I feel relaxed while visiting Hema's online and offline retail stores (e.g., proficient customer service, functioning product delivery and returns). 5. I am looked after while visiting Hema's online and offline retail stores.	Tyrväinen et al. (2020)
Hedonic Experience	1. Shopping in Hema's online and offline retail stores is fun for its own sake. 2. Shopping in Hema's online and offline retail stores makes me feel good.	Holdack et al. (2020)

Content	Item	Source
	3. Shopping in Hema's online and offline retail stores is exciting. 4. Shopping in Hema's online and offline retail stores is enjoyable. 5. Shopping with Hema's online and offline retail stores is interesting	
Trust	1. I have confidence in Hema. 2. Customers can trust Hema. 3. Hema keeps its promises (e.g., delivering on time). 4. Hema has my best interests at heart. 5. Hema is reliable.	Bart et al. (2005); Grosso et al., (2020)
Value Co-creation	1. I feel that I have participated in the process of creating my own experience when I use the Hema app or purchase in offline stores. 2. It gives me lots of autonomy in creating the purchase experience I wanted when I use the Hema app or purchase in offline stores. 3. I often suggest how it can improve its products and services in the customer message area of the Hema app. 4. I actively participate in new product development and early adopters when I use the Hema app or purchase in offline stores. 5. Hema encourages consumers to create solutions together.	Algharabat (2018); Taherpour, (2021)

APPENDIX B

Table B1. Total Variance Explained						
Factor	**Initial Eigenvalues**			**Extraction Sums of Squared Loadings**			**Rotation Sums of Squared Loadings**
	Total	**Variance %**	**Cumulative %**	**Total**	**Variance %**	**Cumulative %**	**Total**
1	14.204	40.583	40.583	14.204	40.583	40.583	4.036
2	2.644	7.553	48.136	2.644	7.553	48.136	4.030
3	2.533	7.236	55.372	2.533	7.236	55.372	4.025
4	2.153	6.151	61.524	2.153	6.151	61.524	4.018
5	2.110	6.029	67.552	2.110	6.029	67.552	3.908
6	1.847	5.276	72.828	1.847	5.276	72.828	3.900
7	1.629	4.655	77.484	1.629	4.655	77.484	3.203
8	.667	1.906	79.390				
9	.397	1.133	80.523				
10	.382	1.093	81.615				
11	.366	1.046	82.661				
12	.354	1.011	83.672				
13	.343	.981	84.653				
14	.323	.924	85.577				
15	.314	.897	86.474				
16	.309	.882	87.356				
17	.305	.870	88.227				
18	.297	.849	89.076				
19	.290	.827	89.903				
20	.282	.807	90.709				
21	.272	.777	91.487				
22	.268	.766	92.252				
23	.252	.721	92.974				
24	.248	.708	93.681				
25	.234	.669	94.350				
26	.231	.660	95.010				
27	.224	.639	95.649				
28	.210	.600	96.249				
29	.204	.583	96.832				
30	.204	.582	97.413				
31	.191	.546	97.959				
32	.189	.541	98.500				
33	.180	.514	99.014				
34	.177	.505	99.520				
35	.168	.480	100.000				

Table B2. Pattern Matrix Exploratory Factor Analysis

	Component						
	1	2	3	4	5	6	7
IN2					.812		
IN5					.805		
IN3					.789		
IN1					.773		
IN4					.770		
PE3	.819						
PE4	.815						
PE1	.807						
PE2	.797						
PE5	.791						
SO3		.844					
SO1		.843					
SO5		.842					
SO2		.831					
SO4		.802					
CE2						.815	
CE1						.814	
CE3						.797	
CE4						.778	
CE5						.753	
HE5				.838			
HE2				.818			
HE3				.810			
HE1				.808			
HE4				.777			
TR2			.847				
TR1			.819				
TR3			.815				
TR4			.809				
TR5			.795				
VVC1							.810
VVC3							.805
VVC4							.799
VVC2							.781

Notes: Extraction method: Principal component analysis;
Rotation method: Varimax with Kaiser normalisation; Rotation converged in 7 iterations

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