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RESEARCH PAPER

Cultural differences in processing online customer reviews: holistic versus analytic thinkers

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Abstract
While the majority of studies exploring online customer reviews in the light of intercultural comparisons draw on the theoretical framework of Hofstede's cultural dimensions, which faced justifiable criticism, we make use of Socio-Cognitive Systems Theory to illustrate how consumers from different cultures are cognitively processing information. By employing this alternative theory, it is shown that the (heretofore established) Elaboration Likelihood Model for examining online customer reviews does not serve as an applicable framework in intercultural contexts. Reviewing extant literature, we uncover incidents questioning the generalizability of previous studies on review credibility conducted among East Asians. Building upon a research model established at a national level, we interviewed Western (German; n=552) and East Asian (Chinese; n=585) consumers to analyze the intercultural appropriateness of the model. The results empirically validate the assumptions of the Socio-Cognitive Systems Theory, and thus, finds Chinese to perceive review credibility holistically, whereas Germans tend to categorize its antecedents for evaluating them separately.

Keywords Online customer reviews · Socio-Cognitive Systems Theory · Intercultural comparison · Elaboration Likelihood Model

JEL classification D11 · D12

Introduction

Although research on online customer reviews (OCRs) mushroomed throughout recent years (Ismagilova et al., 2019b; King et al., 2014), the number of articles dealing with cross-cultural comparisons is still sparse (Lin & Kalwani, 2018). In contrast to this paucity of intercultural research on OCRs, the few studies investigating cultural differences found that consumers' cultural background leads to significantly different outcomes. For instance, reviews are written more positive/negative (Fang et al., 2013), contain more/less emotional expressions (Hong et al., 2016), and vary in the product aspects described (Wang et al., 2019) based on culture. Acknowledging these cultural differences, Amazon meanwhile started to indicate reviewers' nationality and made them available for consumers from different countries. Understanding cultural differences on the perception of OCRs and adapting online shops accordingly could therefore be assumed to enable increased revenue in the corresponding markets.

Out of the few cross-cultural OCR studies, the vast majority of these studies draw on an understanding of cultures that has been developed a decade before the mainstream spread of the Internet and OCRs: Geert Hofstede's cultural dimensions (1980). Based on investigations with IBM employees in the 1970's, Hofstede initially derived four, and iteratively added two more dimensions over time (Hofstede et al., 2017). As Hofstede himself emphasized that new technologies could allow less developed countries

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to leapfrog interim stages of their development and, hence, shift their cultural values (Hofstede, 2011), it needs to be examined to what extent these initial assumptions still hold true in the current age of mobile shopping and omnichannel retailing.

The psychologist Richard Nisbett and colleagues have more recently introduced a different theoretical framework, which might be more appropriate to examine OCRs. They highlight the disparate cognitive information processing of consumers from different cultures, concretely Westerners and East Asians (Nisbett et al., 2001). Their framework about different thinking styles has been used to not only elucidate the perception of online websites (Cyr, 2008; Dong & Lee, 2008; Faiola & Matei, 2005), offline reviews (Aggarwal et al., 2013), and to evaluate brand extensions (Monga & John, 2006), but also yielded mentions in the context of OCRs (Kim et al., 2018).

As the literature indicates that aspects determining the credibility of OCRs (e.g., perceived expertise of reviewers (Obal & Kunz, 2016)) are influenced by culture and, in turn, the perception of credibility itself is affected culturally differently (Tang, 2017), it needs to be explored which factors are able to increase OCRs' credibility in the light of an intercultural comparison. While most literature examining OCRs' credibility are built on the Elaboration Likelihood Model (ELM) from Petty and Cacioppo (1981) (e.g., Cheung et al., 2012; Luo et al., 2014; Thomas et al., 2019), we further intend to challenge its appropriateness in the light of an intercultural comparison, as intercultural generalizability was out of interest by that point. Therefore, we intend to contribute to the literature by (1) addressing recently stated research gaps demanding intercultural investigations about OCRs (Filieri et al., 2018; Lee & Hong, 2019; Lin et al., 2019; Thomas et al., 2019), (2) empirically examining the Socio-Cognitive Systems Theory (SCST) from Nisbett et al. (2001) as an alternative framework to Hofstede's cultural dimension in the context of OCRs, and (3) reviewing ELM's suitability when comparing information processing interculturally. Since recent literature conceded an overreliance on Hofstede's cultural dimensions in information system research and thus, calls for studies applying different theoretical frameworks to thoroughly understand intercultural differences (Chu et al., 2019; Guo et al., 2020), we propose the SCST as an alternative lens on the credibility of OCRs. Hence, we aim to answer how Westerners and East Asians differ in their perception of credible online reviews. To answer this question, we first present recent studies concerning cultural comparison in the context of OCRs and the corresponding cultural framework used before introducing SCST by Nisbett et al. (2001). We then derive our research model and hypotheses, present the empirical investigation, and discuss the results, as well as managerial implications and contributions to literature.

Theoretical background

Cultural comparisons within online customer reviews

Reflections of the extant literature on OCRs and cross-cultural differences reveal that most studies draw on Hofstede's cultural dimensions as theoretical framework to elucidate potential differences in OCR credibility perception (see Table 1). This theory evaluates a society's culture based on its individualism, power distance, uncertainty avoidance, masculinity, long-term orientation, and indulgence (Hofstede et al., 2017). In general, consumers from a collectivist culture (e.g., Asian consumers) were found to be more likely to rely on the opinion of other peers (e.g., in terms of online reviews) than consumers from an individualistic culture (e.g., North American consumers) (Fong & Burton, 2008; Obal & Kunz, 2016; Sia et al., 2009).

More specifically, Hong et al. (2016) found consumers from a collectivist culture to be less likely to deviate from the previous average rating of other consumers' reviews and to express their emotions in a review. Similarly, Luo et al. (2014) found a society's collectivist orientation to weaken the impact of review rating and consistency on review credibility and strengthen the relationship between review sidedness and credibility. However, their investigation was only conducted based on two different online forums within China. With respect to their high score in long-term orientation, Chinese consumers are further considered to be rather risk-averse, and thus, were found to perceive negative reviews as more helpful than American consumers (Fang et al., 2013). Differences regarding the thematic focus within online reviews have also been explained with Hofstede's cultural dimensions, finding evidence that American review authors rather focus on usability features (Wang et al., 2019), whereas Chinese review authors rather comment on the products' aesthetics (Wang et al., 2019; Zhu et al., 2017). Notwithstanding its striking popularity, Hofstede's cultural dimensions are frequently criticized, as insights from IBM employees are considered not generalizable (Hong et al., 2016). They may fall short of capturing the cultural orientation of rapidly developing countries, such as Brazil and China (Tang, 2017).

As an alternative to Hofstede's cultural dimensions, another minor stream of literature makes use of Hall's cultural dimensions classifying cultures as either low- or high-context cultures (Hall, 1976), monochronic or polychronic cultures (Hall, 1983), cultures that need less or more (private) space (Hall, 1966), and slow or fast flow of information (Hall & Hall, 1990). Aside from Hofstede's cultural dimensions, Barbro et al. (2020) used Hall's

Table 1 Recent studies including cultural comparisons and underlying cultural framework

Author (Year)	Frame-work	Study's Focus	Countries of Interest	Findings
Biswas et al. (2021)	HCD	Perceived helpfulness & non-voted reviews	**USA, India**	Culture moderates the effect of antecedents for helpfulness votes (e.g., social context, review title, star rating, review sentiments) on the number of helpfulness votes.
Barbro et al. (2020)	Hall, HCD, SCST	Language's & country's effect on review helpfulness	**Japan, France, Germany, UK, USA**	Culture impacts review length, the degree of response bias, and the number of helpfulness votes.
Hong et al. (2016)	HCD	Conformity's & emotionality's effect on review helpfulness	**52 different countries**	Culture affects the extent to which consumers express emotions when writing reviews and confirm previously read reviews.
Kim et al. (2018)	Hall, HCD, SCST	Review recommendation & posting patterns	**UK, USA, Korea, China**	Culture serves as a moderator regarding consistency in review rating dispersion. Westerners are more likely to give positive reviews. Culture moderates the usefulness of reviews of consumers from the same citizenship.
Lin & Kalwani (2018)	HCD	Occurrence of reviews and relation to sales	**USA, Japan**	Culture affects the relationship between product sales and eWOM, as well as the general occurrence of eWOM.
Obal & Kunz (2016)	HCD	Response to expert/non-expert reviews	**USA, Canada, China, Hong Kong, Taiwan, India, Japan, South Korea, Vietnam, Nepal**	Culture moderates skepticism and the reliance on non-expert versus expert reviewers.
Tang (2017)	HCD	Product market performance	**USA, Spain, China, France, Germany, Italy, UK, Brazil**	Culture moderates the relationship between market share and eWOM.
Wang et al. (2019)	HCD	Various aspects of review description	**USA, China**	Culture is a moderator regarding the emphasis of different product features in reviews. Chinese are more likely to discuss product aesthetics, while Americans articulate themselves more negatively and rely on usability features.
Zablocki et al. (2019)	HCD	Emotional OCR content	**USA, Austria, Thailand**	Different self-construal levels of varying countries moderate the relationship between emotional content and product attitude.
Zhu et al. (2017)	HCD	Dimensions of textual content	**USA, China**	Based on different textual content dimensions on Chinese and American B2C websites: Chinese are more likely to comment on product aesthetics, product quality, price, product functionality, and seller trustworthiness, while Americans are more likely to reference recommendation expressions and emotional attitudes.

Note: HCD=Hofstede's cultural dimensions, Hall=Cultural concept by Hall (1976), SCST=Socio-Cognitive Systems Theory.

framework to elucidate the impact of culture on online reviews and found high-context cultures (e.g., China) to exhibit a lower verbosity. Further, low-context cultures are rather analytical and logical in their textual review content (Kim et al., 2018).

Besides Hofstede's cultural and Hall's dimensions, the SCST gathered attention within OCR research recently. Some studies in the field of OCRs refer to the SCST, even though they do not conduct intercultural comparisons, but use the theoretical underpinnings to explain how information is perceived (Filieri, 2015; Filieri et al., 2018). Besides, SCST's underlying assumptions were confirmed by OCR studies not explicitly referring to this theoretical framework by revealing that Americans rather emphasize usability features. In contrast, products' aesthetics are more often found in Chinese reviews (Wang et al., 2019).

Although OCR literature drawing on SCST is still sparse, initial attempts were made to explain different thinking styles (Kim et al., 2018). Thus, differences in OCR perception are inherent to consumers' cultural identity with SCST. In contrast to the only two studies tangent to SCST in the context of OCR analyzing existing reviews to observe cultural differences (see Table 1), SCST serves as an ideal framework to examine perceptions of information and thus, should be investigated using methods enquiring to reveal such perceptions (e.g., consumer surveys). To the best of the authors' knowledge, this hence is the first study to shed light on OCRs' credibility perception interculturally by explaining differences using SCST and interviewing consumers about review perceptions, which enables new insights for this growing stream of research.

Socio-Cognitive Systems Theory

Instead of aligning with the majority of extant literature focusing on intercultural research, we do not make use of Hofstede's cultural dimensions. Instead, we counteract the previously detected paucity of cultural frameworks applied in information system research and respond to the call for applying other cultural theories (Chu et al., 2019; Guo et al., 2020). In contrast to Hofstede's cultural dimensions developed in the 1970s (Hofstede, 1980), which were exclusively derived by interviewing employees of IBM, we follow the recent criticism on this framework (Hong et al., 2016; Tang, 2017), and focus on the SCST instead.

The theoretical framework of SCST (Nisbett et al., 2001) claims that – as a result of the past decades of socialization within societies – members from different cultures developed different cognitive processing patterns. The authors thereby differentiate Westerners from East Asians by highlighting the historical roots of ancient Greek and ancient China, respectively. As ancient China has influenced East Asian societies (e.g., Korea, Japan) and, to some extent, Southeast Asia, it is assumed that the derived cognitive patterns account for all East Asian cultures. Hence, ancient China individuals' focus on being part of a group (togetherness), which resulted in a culture of avoiding criticism and preventing open debates, affected all East Asian societies. Besides, ancient China's citizens tried to explore the "natural world" by applying empiricism and following their intuitions instead of creating formal models to explain it. Furthermore, Confucianism and the related beliefs stressing harmony and balance influenced ancient China's society. Unlike ancient Greek, ancient China evaluated the world with all its elements and the interdependencies of all its components from a rather holistic perspective instead of disaggregating them. In contrast, ancient Greece influenced European civilizations and post-Columbian American society, and thus, ancient Greek's values (e.g., a tradition of debating), beliefs (e.g., the influence of gods), and their approaches in epistemology (developing models to categorize and explain the nature of objects) serve as starting point for socio-cognitive systems of Westerners. Accordingly, the philosophers of ancient Greek tried to understand the world as it is rather analytically by breaking it down into objects consisting of certain attributes and categorized those attributes accordingly. One of many examples illustrating this different approach can be observed in medicine: While it has been common to execute surgeries to heal one part of the body in Western civilization, East Asians associated health with a balanced Qi related to intertwined, natural forces of Yin and Yang concerning the body as a whole (Nisbett et al., 2001).

As societal structures and organizations are able to affect cognitive processing patterns without being mediated by metaphysical beliefs (Nisbett et al., 2001), the way ancient Greek and China cognitively processed information influenced the patterns of modern Western and East Asian societies. Consequently, SCST postulates that Westerners cognitively process information in an analytical way, while East Asians' cognition follows a more holistic approach (Choi & Nisbett, 2000; Ji et al., 2000; Masuda & Nisbett, 2001; Nisbett et al., 2001; Park et al., 1999).

The values and approaches in epistemology inherent to East Asians and Westerners (see Table 2) can still be observed in how they cognitively process information and, further, in the case of OCRs (Kim et al., 2018).

To elucidate the scarcely applied SCST and its strengths/weaknesses in contrast to the most often applied cultural dimensions by Hofstede (1980), table 3 illustrates a general comparison of the two frameworks.

Research model and hypotheses

Aligning with previous literature on OCRs (Baek et al., 2012; Cheung et al., 2012; Filieri et al., 2018), we base our research model on the ELM developed by Petty and

Table 2 Characteristics of holistic versus analytic thinkers

	East Asians ('Holistic')	Westerners ('Analytic')
Approaches in Epistemology	Focusing on the interdependencies between objects and their context as a whole	Focusing on an object detached from its context
	Paying more attention to the context	Understanding objects as a composition of their parts, which are categorized
	Explaining phenomena based on relationships between objects	Applying formal logic and rules about categorization
Values	Avoiding contradictions and confrontations	Open debates are common
	Emphasizing harmony	

Table 3 General comparison of SCST with Hofstede's cultural dimensions

	SCST (Nisbett et al., 2001)	**Cultural dimensions** (Hofstede, 1980; Hofstede et al., 2017)
Developed based on …	Historical development of metaphysical systems and tacit epistemologies in Ancient China and Greek, combined with different empirical evidence	Interview data with IBM employees from more than 110,000 surveys from more than 70 countries (however, only 40 countries with more than 50 completes each) in 20 languages between 1967-1969 and 1971-1973. (later on extended by ten additional countries)
Established in	2001 (with former groundwork in 1999, 2000, and 2001)	1980 (with extensions in 1988: long-term vs. short-term orientation, and in 2010: indulgence vs. restraint)
(Primary) Application context	Nature of (socio-)cognitive information processing patterns, which affect how people perceive and cognitively process information (rather holistically vs. analytically), as well as behavioral values in society (open debates vs. avoiding confrontations)	General values/beliefs based on dual-polarity for each of the six dimensions, which affect persons' behavior (with each other) or society as a whole, as well as their opinions/attitudes
Cultural differences between …	(East) Asians vs. Westerners (European and post-Columbian civilization (USA/Canada))	Generally, every country with individual scores (e.g., based on value classifications from Hofstede-insights.com)

Cacioppo (1981). This model explains how receivers process persuasive information and how this information affects receivers' attitudes. It separates into a central and a peripheral route of information processing. Messages processed through the central route will make recipients carefully elaborate on the message's content. In contrast, when recipients concentrate on non-message-related information, they will be processed through the peripheral route, causing less stable attitude changes. Against this clear separation, more recent research found that consumers tend to process messages by activating both routes to a certain extent in the context of OCRs (Cheung et al., 2012). Moreover, while multiple studies investigated OCRs' credibility by drawing on the ELM, none of these previous studies examined the ELM's eligibility in the light of intercultural comparisons but applied it for research on a national level only. Similar to messages and their surrounding factors, OCRs consist of the review itself and other indicators (e.g., reviewer expertise, helpfulness votes, and the like), and therefore, the ELM was established as an adequate framework for OCR research models (Baek et al., 2012). Hence, the following constructs are substantiated by extant OCR literature and have proven to represent important factors on a national level (Cheung et al., 2009; Cheung et al., 2012; Luo et al., 2015; Thomas et al., 2019).

Since no other study has examined how review credibility is perceived among consumers with different cultural backgrounds, the question arises whether an identical model would be reasonable, which, in turn, would enable a direct comparison – or whether culturally adapted models are required. This question is founded based on two assumptions. First, taking a closer look at previous studies scrutinizing review credibility, it becomes apparent that they either were conducted among Westerners (Cheung et al., 2012; Thomas et al., 2019) or indicate issues concerning discriminant validity (Cheung et al., 2009; Fang, 2014; Luo et al., 2014; Luo et al., 2015). More specifically, discriminant validity issues among East Asians are likely to arise between argument quality and review rating (Fang, 2014; Luo et al., 2015), author credibility and review rating (Cheung et al., 2009; Luo et al., 2014; Luo et al., 2015), argument quality and review credibility (Cheung et al., 2009; Fang, 2014; Luo et al., 2014; Luo et al., 2015), author credibility and review credibility (Cheung et al., 2009; Luo et al., 2015), review rating and review credibility (Fang, 2014), as well

as author credibility and argument quality (Cheung et al., 2009). Since these studies were conducted before the more reliable heterotrait-monotrait ratio (HTMT) criterion was established (Henseler et al., 2015), they report the Fornell-Larcker criterion only. However, using HTMT might have uncovered the absence of discriminant validity, as it more reliably detects discriminant validity problems than applying the Fornell-Larcker criterion (Henseler et al., 2015). Second, based on the SCST, it is assumed that East Asians tend to perceive information rather holistically, whereas Westerners would apply more analytical thinking patterns. As a result, the need for culturally adapted models might be given, which takes into account the cultural differences in how each group of consumers perceives OCRs and what is perceived as credible. Therefore, we hereinafter test each hypothesis separately for Westerners and East Asians.

Argument quality (ArgQual)

For the central route, we only incorporate ArgQual to develop a parsimonious model. ArgQual's composition and understanding in the literature vary heavily: while some refer to ArgQual as argument strength (Cheung et al., 2009; Fang, 2014) or information quality (Filieri, 2015), others suggest disaggregating it into review length (Filieri et al., 2018; King et al., 2014), word count (Baek et al., 2012; Cheng & Ho, 2015; Fang, 2014) or information quantity (Filieri, 2015). Although a tendency exists according to which the helpfulness of ArgQual will increase with the number of words used, a plateau will be reached after a certain amount of words (Baek et al., 2012). Additionally, the relation between the amount of information provided in OCRs and purchase intentions showed not to be linear, but U-shaped (Furner & Zinko, 2017), whereas too much information could decrease purchase intention (Zinko et al., 2020). Thus, we do not follow this separation. Besides, some studies consider ArgQual to combine both word count and image count (Cheng & Ho, 2015). However, we define ArgQual in line with the notion initially used in the ELM. Accordingly, "[i]f the person perceives the message to contain strong, compelling arguments" (Petty & Cacioppo, 1981, p. 265), then the central route is activated, emphasizing its text-based content without images. Following previous studies (Cheung et al., 2012; Fang, 2014), we assume ArgQual to have a positive effect on review credibility. In line with SCST, Westerners are assumed to rather focus on an object (in our case: the review) itself and tend to neglect contextual factors and the relationship between impact factors. Hence, it could be assumed that ArgQual affects review credibility among Westerners stronger than among East Asians. Based on previous literature, which did neither take into account the SCST, nor the HTMT for uncovering potential discriminant issues, it is hypothesized:

$H1_{West}$: Argument quality has a positive effect on review credibility for Western consumers.

$H1_{E.\text{-}Asian}$: Argument quality has a positive effect on review credibility for East Asian consumers.

Author credibility (AuthorCred)

Besides the central route, research identified various peripheral factors affecting the credibility of OCRs: AuthorCred or source credibility both describe how credible readers perceive the message's source (Cheung et al., 2012). The latter concept rather refers to the credibility of the respective review platform (Hsieh and Li, 2020; Luo et al., 2013; Mudambi & Schuff, 2010; Thomas et al., 2019), whereas the former refers to the credibility of the respective reviewer (Cheung et al., 2009; Ismagilova et al., 2019a; Lee & Hong, 2019; Li et al., 2013). As a result of cultural differences between Westerners and East Asians, difficulties arise in finding an online platform with equal awareness and usage. Hence, focusing on Amazon would be disconcerting for East Asians, as it only contributes to 0.7 percent of the gross merchandise volume in the B2C segment in China (iResearch, 2017). Therefore, we focus on AuthorCred for obtaining comparable results across cultures. Since East Asians value the relationship between members of a group and try to avoid conflicting beliefs, while Westerners evaluate AuthorCred regardless of the review itself and are more used to contrary opinions, it could be assumed that AuthorCred has a stronger positive effect on review credibility for East Asians. However, based on previous research, we propose:

$H2_{West}$: Author credibility has a positive effect on review credibility for Western consumers.

$H2_{E.\text{-}Asian}$: Author credibility has a positive effect on review credibility for East Asian consumers.

Review sidedness (RevSided)

Besides AuthorCred, research found OCRs to be perceived as more credible if they contain both positive as well as negative aspects about an object/product (Cheung et al., 2009; Cheung & Thadani, 2012; Jensen et al., 2013; Luo et al., 2015). This OCR characteristic is often referred to as RevSided (Cheung et al., 2012; Schlosser, 2011) or review extremity (Kuan et al., 2015). By anticipating potential counterarguments, review credibility (as well as review helpfulness (Baek et al., 2012; King et al., 2014)) can be increased. Particularly, incorporating negative aspects could increase the reviews' credibility (Baek et al., 2012; Schlosser, 2011), as these aspects are of higher relevance to the readers compared to positive aspects ('negativity bias'; Cui et al., 2012; Kim et al., 2018; Qiu et al., 2012). However, in contrast to these findings, other research provided contrary

insights. Recently, Li et al. (2020) demonstrated that one reason causing these inconsistent results might be found in the selection of product type (search versus experience goods) and product attribution. While some authors classify RevSided as part of the central route (Luo et al., 2014), others assort it into the peripheral route. In line with the before mentioned explanation about which factors constitute the central route according to the ELM (see Section 3.1), we follow the latter categorization and treat RevSided as part of the peripheral route. As East Asians emphasize harmony and try to avoid conflicts, RevSided may affect review credibility more for East Asians than for Westerners. In line with extant studies, we assume:

$H3_{West}$: Review sidedness has a positive effect on review credibility for Western consumers.
$H3_{E.\text{-}Asian}$: Review sidedness has a positive effect on review credibility for East Asian consumers.

Product and review rating (RevRating)

Further aspects, which are frequently assumed to influence review credibility, are product and review rating (Cui et al., 2012; Gu et al., 2012; Kaushik et al., 2018; Ziegele & Weber, 2015). It is crucial to distinguish between the rating of one single review ('review rating'; RevRating) and the averaged aggregated rating across all reviewers ('product rating'). While for the latter valence (dispersion of review ratings; e.g., Lee & Youn, 2009; Wang & Herrando, 2019), volume (number of reviews; e.g., Kostyra, et al., 2016; Park et al., 2007; Zhang et al., 2014), and overall rating scores (e.g., Qiu et al., 2012; Zhang & Lin, 2018) are of relevance, we focus on elucidating the varying perception among Western and East Asian consumers regarding one single review. The reason for choosing RevRating is three-fold. First, when the product rating provides an ambiguous picture, not revealing a tendency for or against the purchase, online shoppers require additional information. Hence, they will be likely to read single reviews to check how previous readers have rated these reviews (frequently with likes and dislikes (Cheung et al., 2009), see, e.g., at YouTube or eBay) to gather more information before conducting the purchase. Second, single RevRating becomes especially important when trying to sell a (new) product that has not been established yet in the market. As consumers generally focus on reviews with more product ratings resulting in biases towards the already established products ('early bird effect', see, e.g., Risselada et al., 2018), we intend to avoid this effect by selecting RevRating for the research model. Third, as OCRs' purpose lies in dissolving the information asymmetry inherent to e-commerce (particularly in the case of new products and ambiguous rating variance), RevRating should be incorporated. Prior literature found RevRating to increase trust (Goraya et al., 2021) and review credibility among Chinese (Cheung et al., 2009), whereby this effect is strengthened by the sense of membership (Luo et al., 2015). According to SCST, East Asians emphasize group membership and harmony, and thus, they may be more likely to rely on prior readers' judgments (as indicated by RevRating). Additionally, the more holistic East Asians are assumed to pay more attention to contextual information cues besides the review itself, which is why they RevRating plays a larger role in assessing a review's credibility. Hence, the positive effect of RevRating towards review credibility is assumed to be higher for East Asians. Aligning with previous studies, which did not incorporate the HTMT, nor made use of the SCST as a theoretical framework, we separately hypothesize:

$H4_{West}$: Review rating has a positive effect on review credibility for Western consumers.
$H4_{E.\text{-}Asian}$: Review rating has a positive effect on review credibility for East Asian consumers.

Review consistency (RevConsist)

Another important factor affecting review credibility of OCRs represents RevConsist (Cheung et al., 2009; Cheung et al., 2012; Luo et al., 2015; Schlosser, 2011; Thomas et al., 2019). Prior research uniformly defines RevConsist as the extent to which a review's information is consistent with other reviews (for the same product). With the increasing occurrence of the same review information across multiple reviewers, the review's credibility will rise (Luo et al., 2015). As we focus on single reviews, RevConsist can only be evaluated by other reviews read in the past. According to SCST, East Asians approach of emphasizing harmony (also related to Taoism and the Yin-Yang principle) results in a dialectic, whereas seemingly incompatibilities ("A can actually imply that not A is also the case" (Nisbett et al., 2001, p. 294)) are also accepted. In contrast, Westerners are not afraid of open debates to obtain reliable, consistent findings, and hence, they might pay more attention to RevConsist. Testing the hypotheses separately, we assume:

$H5_{West}$: Review consistency has a positive effect on review credibility for Western consumers.
$H5_{E.\text{-}Asian}$: Review consistency has a positive effect on review credibility for East Asian consumers.

Review credibility (RevCred) and purchase intention (PI)

Besides review helpfulness, RevCred is frequently chosen as the dependent variable in the context of OCR investigations. According to the meta-analytic review by Ismagilova et al. (2019b), OCR information is evaluated helpful when it is useful for deciding about a purchase, and such useful reviews impact the intention to buy the corresponding products with lower intensity compared to RevCred. As

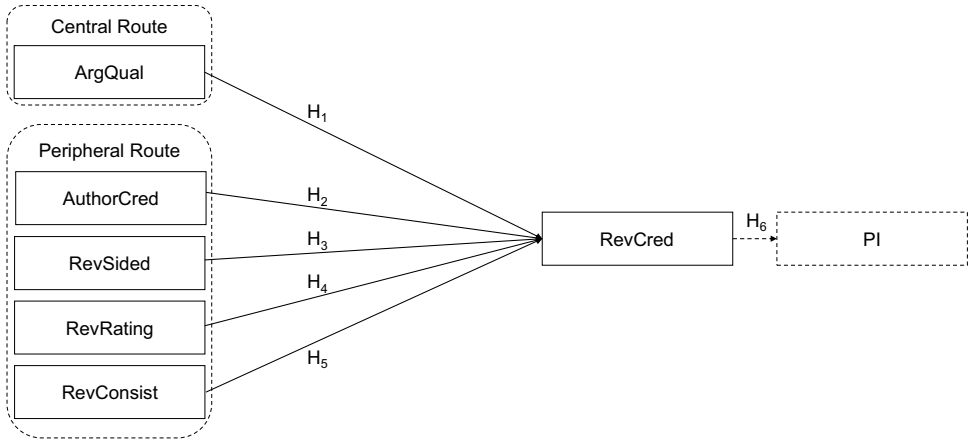

Fig. 1 Established model about review credibility based on prior research without intercultural comparisons

online shop operators and manufacturers alike are primarily interested in increasing their sales, we thus rather focus on RevCred. In the same vein, Baek et al. (2012, p. 99) summarized that "the most important factor in eWOM adoption is information credibility", which is why online retailers should provide credible OCRs to ensure long-term success. In contrast to review helpfulness (frequently understood as voting judgments for each review), RevCred neither suffers from the winner circle bias nor the early bird bias within eWOM (Li et al., 2013).

Moreover, as the number of fake reviews increases, thus, negatively affecting consumers' purchase intention (Zhang et al., 2016; Zhuang et al., 2018), exploring RevCred seems to be of particular importance. Besides, selecting RevCred as our dependent variable allows us to fill the recently claimed literature gap demanding intercultural research on RevCred (Thomas et al., 2019). As the antecedents of credibility (Obal & Kunz, 2016) and thus, credibility itself, are subject to different cultural perceptions and importance, RevCred ought to be examined within an intercultural comparison. While it has been shown that (offline) WOM affects customer evaluation dependent on cultural background (Schumann et al., 2010), and culture to affect WOM (Lam et al., 2009), no other study has examined RevCred in the light of an intercultural comparison yet (see Table 1). From a practitioner's perspective, it can be assumed that the potential sales increase related to OCRs is of higher importance than the impact of RevCred alone. Therefore, we follow prior research (Cheung & Thadani, 2012; Thomas et al., 2019), enrich the currently sparse literature between eWOM and actual sales (Lin & Kalwani, 2018), and complement our model by integrating purchase intention (PI) to illustrate the impact of credible OCRs on PI. While more credible reviews are assumed to result in higher PI for consumers of both cultures, East Asians are considered to actively avoid contradictions and emphasize harmonic relations. Thus, not buying a product even though its reviews are perceived as highly credible is less likely to occur among East Asians. Additionally, Westerners' analytic information processing might more likely lead to two separate evaluations: the credibility of a review and the decision regarding a potential purchase of the corresponding product. However, based on extant research, one would expect:

$H6_{West}$: Review credibility has a positive effect on purchase intention for Western consumers.
$H6_{E.\text{-}Asian}$: Review credibility has a positive effect on purchase intention for East Asian consumers.

Summarizing these prior findings, we derive a model that is established in literature (e.g., Cheung et al., 2012; Luo et al., 2015), but has not been examined in the light of an intercultural comparison and by viewing it through the lenses of the SCST (see Fig. 1).

Method

Questionnaire and measurement items

To measure the constructs and their relations, we developed an online questionnaire. To assess wording, clarity, appropriateness, and completeness, we pre-tested the questionnaire with five researchers and experienced participants (n=19). Only minor amendments were made. The final questionnaire consisted of three major sections. The first section comprised preliminary questions about online shopping frequency and asked about which product category respondents are most likely to read OCRs for (multiple selections possible).

Within the main part, the respondents first were exposed to one online review in their respective native language. In line with previous literature, the reviews were derived from a real online shop (Amazon.com), to create a realistic setting (Luo et al., 2015). To yield more generalizable

Table 4 Measurement items

Construct	Items	Source
Argument Quality	1: Arguments of this online review were convincing. 2: Arguments of this online review were persuasive. 3: Arguments of this online review were strong.	(Fang, 2014)
Author Credibility	1: The reviewer was credible. 2: The reviewer was experienced. 3: The reviewer was trustworthy. 4: The reviewer was reliable.	(Filieri, 2015)
Review Sidedness	1: This review includes both pros and cons of the discussed target. 2: This review includes both positive and negative comments.	(Luo et al., 2015)
Review Consistency	1: The comments made in this review are consistent with other reviews I have read in the past. 2: The comments made in this review are similar to other reviews I have read previously. 3: The comments made in this review match with other reviews I have read before.	Adapted from (Luo et al., 2015)
Review Rating	1: Based on the review rating, this review was found to be favorable by previous readers. 2: Based on the review rating, this review was highly rated by previous readers. 3: According to the review rating level, this review was good.	(Luo et al., 2015), (Cheung et al., 2009)
Review Credibility	1: I think this review is believable. 2: I think this review is factual. 3: I think this review is accurate. 4: I think this review is credible.	(Cheung et al., 2012)
Purchase Intention	1: Based on this product description, I would recommend my friend to buy this product. 2: Based on this product description, I will purchase this product next time I need a product like this. 3: Based on this product description, it is likely that I will buy this product. 4: Based on this product description, I will definitely try this product.	(Jiang & Benbasat, 2007)

insights and prevent product-specific as well as format-related biases, respondents faced the review based on four conditions (textual review; video-based review; digital camera; tablet) to which they were assigned randomly. As high-involvement products are related with a more extensive information search (inter alia, due to more expensive prices; Baek et al., 2012), we decided to use one review of a digital camera (Mudambi & Schuff, 2010; Obal & Kunz, 2016; Wang et al., 2019), as well as one review of a tablet (Li et al., 2019; Risselada et al., 2018), because they have already been applied in similar investigations in the OCR research. Following extant research, the number of words comprised approximately 400 words (Xu et al., 2015) and consisted of both pros and cons about the product (Cheung et al., 2009). Any information about the product's price or brand was avoided to prevent any related biases. Secondly, respondents evaluated the constructs based on several items. The constructs' items were adopted from previous literature (see Table 4). The last part inquired about the respondents' demographics.

Data collection and descriptive statistics

To collect data for East Asians, we focused on China's consumers, as they represent the biggest e-commerce market worldwide (Akram et al., 2018). We decided to gather consumer data from Germany for Westerners and extend the geographical scope of extant OCR literature, primarily drawing on American consumers as Westerners. The target group of consumers is 'Generation Y' (aged between 20 and 39 years), as this segment is among the most important online shopper segments (Ladhari et al., 2019) and is known for utilizing OCRs (Lee & Hong, 2019). To prevent biases in the sampling approach and yield comparable samples, we used a well-established panel provider (Kantar Group), which has previously been used in OCR research (inter alia Tang, 2017). Hence, we acquired samples, which intended to be representatively spread across both countries with equal shares of males and females exhibiting online shopping affinity. Representativeness of the samples was attempted based on age, gender, and region of the consumers.

In total, we collected 616 responses from Chinese consumers in June 2020. However, we excluded straightliners (n=5), speeders (n=19), and those with incorrect control questions

Table 5 Descriptive statistics

Demographics		German sample (n=552)		Chinese sample (n=585)	
		Frequency	Proportion (in %)	Frequency	Proportion (in %)
Gender	Female	276	48.4	299	51.1
	Male	274	48.1	286	48.9
	Diverse	2	0.4	0	0
Age	20-24 years	99	17.9	49	8.4
	25-29 years	115	20.9	138	23.6
	30-34 years	164	29.7	236	40.3
	35-39 years	174	31.5	162	27.7
Education	Without qualification	1	0.2	1	0.2
	Primary education	29	5.3	3	0.5
	Secondary School level I	84	15.2	7	1.2
	High School degree	137	24.7	419	71.5
	Technical education	134	24.3	12	2.1
	Bachelor	80	14.5	77	13.2
	Master	75	13.6	59	10.1
	PhD	7	1.3	4	0.7
	Other	5	0.9	3	0.5
Online shopping frequency	≥ 8 times per month	64	11.2	220	37.6
	5-7 times per month	100	17.5	184	31.5
	2-4 times per month	242	42.5	165	28.2
	≤ 1 times per month	146	25.6	16	2.7
Product category in which OCRs are most likely to be read*	Apparel & shoes	266	48.2	493	84.3
	Consumer electronics	412	74.6	462	79.0
	Furniture & decoration	146	26.5	266	45.5
	Household appliances	283	51.3	389	66.5
	Books & audio books	151	27.4	165	28.2
	Sports equipment &leisure	152	27.5	372	63.6
	Movies & music	139	25.2	148	25.3
	Others	48	8.7	22	3.8

Note: * = Multiple choice

(n=7). Among Germans, we gathered 591 completes and screened the sample for the same criteria (straightliners n=15; speeders n=7; control question incorrect n=17). Accordingly, the final samples consist of 585 Chinese and 552 Germans. The German sample consists of 50% males and is on average 31 years old (SD=5.67). The Chinese sample contains 49% males and is, on average, also 31 years old (SD=4.66). Table 5 provides a detailed overview of further descriptive statistics.

Results

Results: established model

German sample

The model is analyzed for the German and the Chinese

Table 6 Construct assessment for the German sample

Construct	Cronbach's Alpha	Composite Reliability	AVE
ArgQual	0.856	0.912	0.776
AuthorCred	0.899	0.937	0.832
RevConsist	0.832	0.898	0.746
RevRating	0.878	0.925	0.803
PI	0.928	0.949	0.822
RevCredG	0.895	0.928	0.763
RevSided	0.755	0.890	0.802

Note: ArgQual = Argument Quality, AuthorCred = Author Credibility, AVE = Average Variance Extracted, RevConsist = Review Consistency, RevCredG = Review Credibility (in German sample), RevRating = Review Rating, RevSided = Review Sidedness, PI = Purchase Intention.

Cronbach's Alpha, Composite Reliability, and average variance extracted (AVE) (Hair et al., 2011; Hair et al., 2019). Table 6 summarizes the findings, indicating sufficient values for all latent variables.

Next, discriminant validity is assessed using a triad of the Fornell-Larcker criterion, an evaluation of cross-loadings, and the HTMT (Henseler et al., 2015). Both Fornell-Larcker and cross-loadings confirm discriminant validity, as displayed in Table A.1 and Table A.2 in Appendix A. HTMT yields a slightly high value of 0.884 for the pair of ArgQual / RevCredG. This potential issue is resolved by a bootstrapping procedure with 10,000 draws, calculating HTMTinference. The 95 percent confidence interval ranges from 0.767 to 0.888, far off the null value of 1. Hence, discriminant validity for ArgQual / RevCredG could be established (Henseler et al., 2015). HTMT values are provided in Table 7.

Table 7 HTMT ratios for the German sample

	ArgQual	AuthorCred	RevConsist	RevRating	PI	RevCredG	RevSided
ArgQual							
AuthorCred	0.846						
RevConsist	0.568	0.575					
RevRating	0.706	0.737	0.588				
PI	0.651	0.582	0.578	0.503			
RevCredG	0.835	0.884	0.613	0.640	0.604		
RevSided	0.508	0.545	0.322	0.467	0.239	0.535	

Note: ArgQual = Argument Quality, AuthorCred = Author Credibility, RevConsist = Review Consistency, RevCredG = Review Credibility (in German sample), RevRating = Review Rating, RevSided = Review Sidedness, PI = Purchase Intention.

Table 8 Hypotheses testing for the German sample

Hypothesis				Path coefficient (effect size f^2)	95 percent CI (BCa)	T-value (p-value)
H1	ArgQual	➔	RevCredG	0.270 (0.100)	[0.172, 0.367]	5.470 (< 0.001)
H2	AuthorCred	➔	RevCredG	0.513 (0.320)	[0.408, 0.616]	9.663 (< 0.001)
H3	RevSided	➔	RevCredG	0.075 (0.015)	[0.019, 0.130]	2.624 (0.008)
H4	RevRating	➔	RevCredG	-0.034 (0.002)	[-0.106, 0.044]	0.891 (0.373)
H5	RevConsist	➔	RevCredG	0.145 (0.047)	[0.081, 0.215]	4.249 (< 0.001)
H6	RevCredG	➔	PI	0.557 (0.450)	[0.480, 0.619]	16.020 (< 0.001)

Note: ArgQual = Argument Quality, AuthorCred = Author Credibility, BCa = bias-corrected and accelerated, CI = confidence interval, RevConsist = Review Consistency, RevCredG = Review Credibility (in German sample), RevRating = Review Rating, RevSided = Review Sidedness, PI = Purchase Intention.

sample. Partial least squares structural equation modeling (PLS-SEM) with SmartPLS 3.3 (Ringle et al., 2015) is used, employing a path weighting scheme with 300 maximum iterations and a stop criterion of 10^{-7}. In both cases, the algorithm converged after five iterations.

Model assessment begins with the outer, i.e., measurement, model. Starting with the German sample, outer loadings are checked. All indicators meet the threshold of 0.708. Construct reliability and validity are evaluated drawing on

After the measurement model assessment, we move on to the inner, i.e., structural, model. As a first step, potential collinearity issues are checked, drawing on variance inflation factors (VIFs). VIF values range between 1.000 and 2.746, indicating an absence of issues (Hair et al., 2019). Consequently, the results from the structural model can be interpreted meaningfully. The coefficient of determination

Table 9 Construct assessment for the Chinese sample

Construct	Cronbach's Alpha	Composite Reliability	AVE
ArgQual	0.747	0.854	0.663
AuthorCred	0.872	0.921	0.796
RevConsist	0.874	0.922	0.797
RevRating	0.858	0.914	0.779
PI	0.934	0.953	0.835
RevCredC	0.918	0.942	0.803
RevSided	0.792	0.906	0.828

Note: ArgQual = Argument Quality, AuthorCred = Author Credibility, AVE = Average Variance Extracted, RevConsist = Review Consistency, RevCredC = Review Credibility (in Chinese sample), RevRating = Review Rating, RevSided = Review Sidedness, PI = Purchase Intention.

Chinese sample

An assessment of the outer loadings reveals that most values exceed the recommended threshold of 0.708, except for ArgQual4 yielding a loading of 0.687. However, the check of construct reliability and validity shows that all criteria are sufficient, and, as such, the indicator is maintained to ensure theoretical rigor. Table 9 summarizes the results.

To evaluate discriminant validity, we draw on Fornell-Larcker, cross-loadings (provided in Table A.3 and Table A.4 in Appendix A), and HTMT once again. In contrast to the German sample, we find severe issues. For the Fornell-Larcker criterion, RevCredC exceeds ArgQual's AVE square root. Cross-loadings reveal rather high values for the pairs of ArgQual and RevCredC, as well as ArgQual and AuthorCred. HTMT corroborates these findings (see Table 10): critically high values are detected for ArgQual and AuthorCred (HTMT = 0.930), ArgQual and RevRating (HTMT = 0.902), ArgQual and RevCredC (HTMT = 0.961), AuthorCred and RevRating (HTMT = 0.910), and AuthorCred and RevCredC (HTMT = 0.929). This result seems devastating at first; however, the German sample confirms the measurement model and proves its applicability, and previous investigations have proven the model's applicability in other Western societies (Cheung et al., 2012; Thomas et al., 2019). Consequently, the question of the Chinese sample's results arises.

Table 10 HTMT ratios for the Chinese sample

	ArgQual	AuthorCred	RevConsist	RevRating	PI	RevCredC	RevSided
ArgQual							
AuthorCred	0.930						
RevConsist	0.515	0.407					
RevRating	0.902	0.910	0.428				
PI	0.874	0.760	0.449	0.762			
RevCredC	0.961	0.929	0.408	0.836	0.757		
RevSided	0.757	0.740	0.320	0.686	0.602	0.740	

Note: ArgQual = Argument Quality, AuthorCred = Author Credibility, RevConsist = Review Consistency, RevCredC = Review Credibility (in Chinese sample), RevRating = Review Rating, RevSided = Review Sidedness, PI = Purchase Intention.

is used to assess the model's explanatory power. PI exhibits R^2 and adjusted R^2 values of 0.310 and 0.309, respectively. RevCredG yields values of 0.699 and 0.697. A blindfolding procedure was employed to derive Q^2 values for an assessment of predictive ability. A Q^2 of 0.249 is calculated for PI, and a value of 0.525 for 0.525, indicating predictive relevance. Table 8 shows hypotheses testing results, carried out using bootstrapping with 10,000 draws (Streukens & Leroi-Werelds, 2016).

Most hypotheses can be supported. No convincing evidence for the impact of RevRating on RevCredG could be established. Regarding RevCredG, the construct is most substantially affected by AuthorCred (path coefficient = 0.513, $f^2 = 0.320$), followed by ArgQual (path coefficient = 0.270, $f^2 = 0.100$). RevConsist, on the other hand, only yields a small effect on RevCredG (path coefficient = 0.145, $f^2 = 0.047$). The impact of RevSided (path coefficient = 0.075, $f^2 = 0.015$) falls slightly short of the recommended threshold for a small effect. RevCredG, in turn, yields a strong effect on PI (path coefficient = 0.557, $f^2 = 0.450$) and is found to be a good predictor (PI's R^2 value is 0.310, and Q^2 value is 0.249).

While these findings for the established research model might seem irritating at first glance, they validate the assumptions of SCST for East Asians. Accordingly, Chinese consumers consider AuthorCred, ArgQual, RevRating, and RevCredC not as stand-alone constructs, but rather evaluate the review holistically by incorporating contextual factors and the relationship between the factors (Nisbett et al., 2001). In contrast, Westerners analyze each object individually (detached from its context and relationships to other constructs), try to categorize it, and thus, discriminant validity issues do not occur.

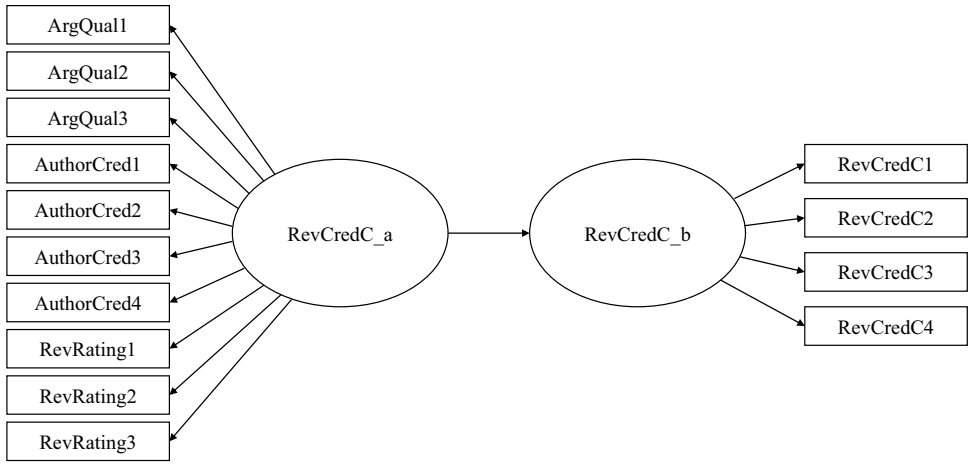

Fig. 2 Equivalence assessment. **Note** Latent variables are displayed as ellipses, manifest variables (indicators) are shown as rectangles. ArgQual = Argument Quality, AuthorCred = Author Credibility, RevCredC = Review Credibility (in Chinese sample), RevRating = Review Rating

This finding is somewhat mirrored by previous research on credible OCRs. While other studies demonstrated that the heretofore established model works well among Westerners (e.g., Cheung et al., 2012; Thomas et al., 2019), indications for discriminant validity issues arise in investigations, which have been conducted among East Asians (as outlined in chapter 3). Since the latter ones (Cheung et al., 2009, Fang, 2014, Luo et al., 2014; Luo et al., 2015) were carried out before the HTMT criterion was established, which is more reliable in uncovering discriminant validity issues (Henseler et al., 2015), previous research might likely have overlooked signs of holistic thinking patterns.

Following the assumption of the SCST, ArgQual, AuthorCred, and RevRating might not be perceived as independent constructs by the holistic East Asians, but rather their interplay is of higher importance compared to Westerners (Nisbett et al., 2001). Hence, the constructs ArgQual, AuthorCred, and RevRating are combined to yield one latent variable, as, contrary to the popular assumption, they cannot be integrated into a higher-order construct, as this construct's lower-order components still need to exhibit discriminant validity (Sarstedt et al., 2019). Regarding the previous discriminant validity issues, the newly composed variable is expected to be equivalent to RevCredC. To test our assumption, we use a convergent validity approach that is commonly used to assess formative higher-order constructs and show that for the holistic Chinese culture, RevCredC and a composite of ArgQual, AuthorCred, and RevRating are equivalent.[1] Fig 2 displays the model configuration necessary for the evaluation. Confirmatory tetrad analysis (CTA-PLS) was used to verify that the left-hand construct's reflective specification is correct (Gudergan et al., 2008).

The path coefficient between the integrated latent variable and RevCredC is 0.849, which exceeds the recommended threshold of 0.8 for convergence by far. This value also indicates symmetric effects (Woodside, 2013), which we would demand for equivalent latent variables. The imposed effect is very strong ($f^2 = 3.318$), and the R^2 value for RevCredC identified through its original indicators is 0.768. Consequently, we culturally adapt the structural model for the Chinese sample, consistent with its holistic cultural nature. The measurement model, due to parsimony, specifies RevCredC using its four indicators instead of the pool of indicators stemming from ArgQual, AuthorCred, and RevRating. Figure 3 displays the adapted model.

Results: culturally adapted models

The novel model is assessed from the ground up, starting with outer loadings, all of which exceed 0.708. Construct reliability and validity could be established, as shown in Table 11.

The Fornell-Larcker criterion (Table B.1 in Appendix B), assessment of cross-loadings (Table B.2 in Appendix B), and HTMT (Table 12) corroborate the latent variables' discriminant validity.

Moving on to the inner model, VIFs are checked, which are ranging between 1.000 and 1.077. Thus, collinearity issues can be assumed to be absent. R^2 values are 0.481 for PI and 0.442 for RevCredC. Derived from a blindfolding procedure, PI yields a Q^2 value of 0.398, and RevCredC a Q^2 of 0.353.

The adapted model yields striking effects of RevSided on RevCredC, and RevCredC on PI. RevConsist exhibits

[1] For the sake of completeness, we conducted the identical Confirmatory Factor Analysis for both samples to preclude that the holistic approach could potentially be found among Germans, too. However, Confirmatory Factor Analysis shows that the single-factor model is compatible with the Chinese sample (CFI = 0.962, TLI = 0.952, RMSEA = 0.087, SRMR = 0.032) but not compatible for the German one (CFI = 0.853, TLI = 0.811, RMSEA = 0.177, SRMR = 0.072). We would like to thank the anonymous reviewer for inspiring us to add this additional test.

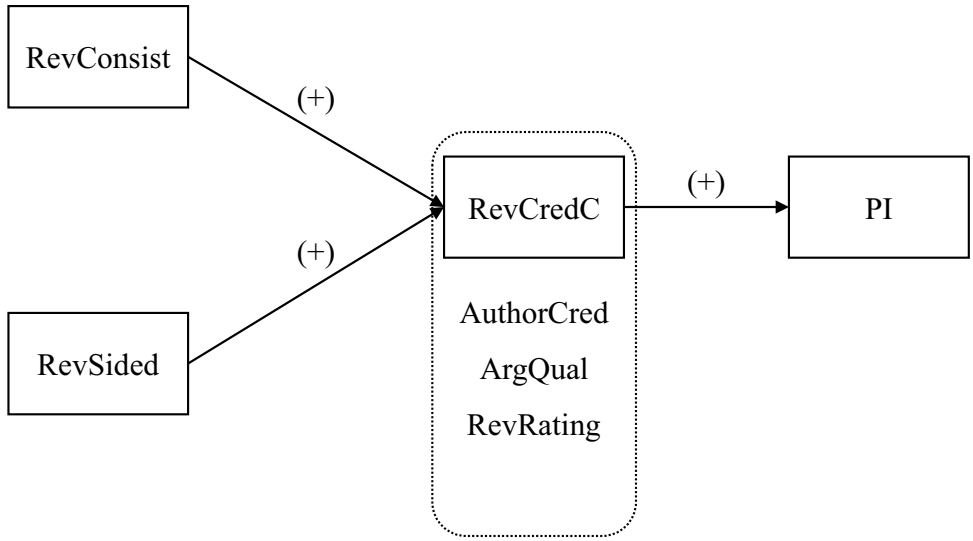

Fig. 3 Culturally adapted model. **Note** ArgQual = Argument Quality, AuthorCred = Author Credibility, RevConsist = Review Consistency, RevCredC = Review Credibility (in Chinese sample), RevRating = Review Rating, RevSided = Review Sidedness, PI = Purchase Intention

Table 11 Construct assessment for the adapted model

Construct	Cronbach's Alpha	Composite Reliability	AVE
RevConsist	0.874	0.922	0.797
PI	0.934	0.953	0.835
RevCredC	0.918	0.942	0.803
RevSided	0.792	0.906	0.828

Note: RevConsist = Review Consistency, RevCredC = Review Credibility (in Chinese sample), RevSided = Review Sidedness, PI = Purchase Intention.

Table 12 HTMT ratios for the adapted model

	RevConsist	PI	RevCredC	RevSided
RevConsist				
PI	0.449			
RevCredC	0.408	0.747		
RevSided	0.320	0.602	0.740	

Note: RevConsist = Review Consistency, RevCredC = Review Credibility (in Chinese sample), RevSided = Review Sidedness, PI = Purchase Intention.

a comparatively smaller impact with a path coefficient of 0.217 and an f^2 value of 0.078 (see Table 13).

Discussion

Reflecting on extant OCR literature and the claims to explore OCRs in the context of intercultural comparisons, we intended to analyze how Westerners and East Asians differ in their perceptions of credible reviews. Based on considerations founded on the SCST, and by contrasting prior RevCred research conducted among Westerners or East Asians (see chapter 5.1.2 Chinese Sample), we adapted our research model for Chinese consumers. Its adapted form appears to fit the extant literature better and provides a vivid illustration of the differences between analytic and holistic thinkers.

For both samples, a strong impact of RevCred is imposed on PI (H6), indicating that consumers indeed integrate this information into their opinion formation. The effect was strong for Germans and Chinese alike, but even more substantial for the holistic thinkers ($f^2 = 0.927$). RevRating did not yield a considerable impact for the German sample (H4),

Table 13 Hypotheses testing for the Chinese sample

Hypothesis				Path coefficient (effect size f^2)	95 percent CI (BCa)	T-value (p-value)
H3	RevSided	➔	RevCredC	0.573 (0.548)	[0.500, 0.640]	16.006 (< 0.001)
H5	RevConsist	➔	RevCredC	0.217 (0.078)	[0.144, 0.292]	5.697 (< 0.001)
H6	RevCredC	➔	PI	0.694 (0.927)	[0.621, 0.751]	21.047 (< 0.001)

Note: BCa = bias-corrected and accelerated, CI = confidence interval, RevConsist = Review Consistency, RevCredC = Review Credibility (in Chinese sample), RevSided = Review Sidedness, PI = Purchase Intention.

which appears rather surprising. As analytical thinkers, the assumption would be that German consumers include information about the general reputation of a review to gain additional data on its reliability. However, this does not seem to be the case.

Summarizing the insights gained based on the hypotheses tested, RevSided (H3) and RevConsist (H5) both positively affect RecCredC among Chinese. While the impact of RevConsist was revealed to be comparably strong to previous literature (Luo et al., 2014; Luo et al., 2015), RevSided appears to be stronger in our study (Luo et al., 2014). This difference might be caused by the more parsimonious model used in this investigation compared to previous ones. Moreover, two studies conducted among Chinese found no effect of RevSided on RevCred (Cheung et al., 2009; Luo et al., 2015), whereas this might be due to a combination of more variables and smaller samples (n=159 and seven independent variables; n=308 and six independent variables). Additionally, RevCred is strongly influencing PI (H6) and thus, underlines the financial importance of receiving credible OCRs. In the German sample, all hypotheses except H4 were confirmed. Compared with extant studies among Westerners, the findings match those regarding ArgQual, RevSided, RevConsist on RevCredG (Cheung et al., 2012). Also, the strong effect of RevCredG on PI found among Germans (Thomas et al., 2019) was confirmed by our study.

Theoretical contribution

Our investigation emphasizes the need to culturally adapt model settings in case of varying cognitive processing patterns among respondents based on the SCST. Accordingly, the more holistic Chinese consumers perceived ArgQual, RevRating, and AuthorCred as one driver constituting RevCred, whereas more analytic Westerners strongly separate those three constructs and evaluate each antecedent independently, yielding diverse impact sizes. In contrast to prior literature building upon the ELM as a theoretical framework for examining online reviews (Cheung et al., 2012; Filieri et al., 2018; Luo et al., 2015), we contribute to the literature by empirically demonstrating and theoretically explaining (Nisbett et al., 2001) that such models cannot be applied uniformly across cultures, but need to be adapted contingent on respondents' cultural roots. Therefore, the clear distinction between the central and the peripheral route suggested by the ELM did not hold among Chinese consumers facing OCRs. A potential explanation may be found in the circumstances of how, when, and by whom the ELM was developed. When ELM was introduced, the two American researchers incorporated motivation and ability to process information, as well as the nature of the message's arguments and nature of the advocacy into their model (Petty & Cacioppo, 1981); however, intercultural generalizability was not a major concern by that point of time.

While literature exploring OCRs proliferated in the last decade, none of the studies concerning the credibility of reviews (Cheung et al., 2009; Cheung et al., 2012; Fang, 2014; Luo et al., 2014; Luo et al., 2015; Thomas et al., 2019) examined discriminant validity between constructs based on the HTMT criterion, which is more reliable in uncovering discriminant validity issues compared to the Fornell-Larcker criterion and cross-loadings (Henseler et al., 2015). Holistically scrutinizing previous research related to RevCred dependent on where (Western or East Asian countries) those studies were conducted, we identify objectionable high cross-loadings/Fornell-Larcker assessments among studies from East Asian countries. Thus, no other study has shed light on the necessity to culturally adapt research models when surveying East Asians to yield valid results and prevent discriminant validity issues.

Apart from that, we contribute to the literature by empirically validating the assumptions of the SCST (Nisbett et al., 2001) based on two comparably large samples representatively spread over China and Germany in the context of OCRs. Hence, we prove that the Westerners are more likely to analytically break down online reviews into their subcomponents (e.g., the argument made, its rating, and the like), whereas East Asians holistically perceive RevCred to be composed of ArgQual, RevRating, AuthorCred, and their relationships. Moreover, building upon an alternative framework for cultural differences enabled us to contemplate the cognitive perception of OCRs from a different angle. We thereby emphasize the need to explore cross-cultural differences with perspectives beyond the viewpoints of Hofstede's cultural dimension to analyze and understand disparities sufficiently. By doing so, we also respond to recent research, which identified an overreliance on Hofstede's theory as a barrier to thoroughly explore cultural differences in information system research, and hence, calls for future studies enriching the paucity of cultural frameworks applied (Chu et al., 2019; Guo et al., 2020).

Besides, we add to previous research by being the first to examine OCR's credibility in the light of an intercultural comparison. As Luo et al. (2014) analyzed information credibility comparing two Chinese online forums highlighting intra-cultural differences, recent papers claimed research on intercultural comparisons about OCRs (Filieri et al., 2018; Lin et al., 2019), especially regarding RevCred (Thomas et al., 2019). We thus filled this research gap and revealed that reviews including pros and cons yield a substantial effect on the credibility of OCRs among East Asians, whereas this characteristic is of minor relevance among Westerners. While this confirms earlier findings among Westerners (Cheung et al., 2012), it contradicts studies among East Asians (Cheung et al., 2009; Luo et al., 2014; Luo et al.,

2015) that did not consider HTMT as a criterion for assessing discriminant validity and thus, did not culturally adapt their research models accordingly. Similar to other research examining the impact of the reviewers' expertise among Westerners (Thomas et al., 2019), AuthorCred exhibited a very strong impact on RevCred among Germans. Besides AuthorCred, ArgQual represents the strongest effect on RevCred among Germans, which verifies the assumptions inherent to SCST, as Westerners rather focus on the content of a review itself regardless of other contextual factors.

Practical implications

Apart from our theoretical contributions, this study's results allow practical implications for researchers and practitioners. From a researchers' perspective, proving that RevCred is equivalent to the composition of ArgQual, AuthorCred, and RevRating among holistic East Asian consumers allows future investigations to omit including items for four different constructs, and instead, incorporate RevCred only. This shortens questionnaires examining RevCred in OCRs enormously, and thus, prevents (or at least attenuates) respondent fatigue. However, further studies might be needed to replicate this finding to strengthen this approach's reliability.

Moreover, our findings suggest that online shop operators in East Asia implement various OCR features into their user interfaces to allow consumers to incorporate contextual factors besides the review text itself. Furthermore, they might restructure the input mask for reviewers by providing a pro's and a separate con's section, as Chinese consumers emphasize the importance of RevSided. Additionally, evincing at least one positive as well as one negative aspect about the review's object could be incentivized (e.g., receiving a discount voucher for the next purchase). In contrast to online shops in East Asia, Western managers should consider highlighting the role of review authors, as it affects a review's credibility the most besides the review text (arguments) itself. Therefore, they might integrate a star rating for authors highlighting helpful reviews (ranging from one to five) or some kind of categorization indicating the experience and credibility of authors, such as "proficient reviewer" (level 1), "top reviewer" (level 2), "excellent reviewer" (level 3) for providing reviews that receive high numbers of helpfulness votes.

Limitations and future research

This study focused on high-involvement products only due to higher search costs and financial risk (which could also be categorized as search goods). Therefore, it needs to be questioned to what extent our findings may be replicated for experience goods or low-involvement products, as OCR research indicates differences based on product type (Baek et al., 2012; Xu et al., 2015). Thus, future research could examine intercultural comparisons regarding OCRs of experience goods or low-involvement products.

Further, we extended the geographical scope of OCR research by examining German, instead of the predominant American samples, citizens. According to the SCST, all Westerners are assumed to process information, and thus OCRs, rather analytically. It still needs to be further examined whether our findings can be confirmed for Westerners from other countries, as well as for other East Asian consumers. Similarly, intra-cultural differences were out of scope in this study, whereas research indicates disparities concerning digital consumer engagement (Thompson & Brouthers, 2021).

Conclusion

As the number of articles examining OCRs in the light of intercultural comparisons is still scarce, and thus, research demands further investigations to explore the field (Filieri et al., 2018; Lee & Hong, 2019; Lin et al., 2019), we intended to analyze how Westerners and Asians differ in their perception of credible online reviews. Illustrating recent OCR studies that incorporate intercultural comparison, we found that the vast majority of research refers to Hofstede's cultural dimensions, even though this framework faced a lot of criticism (Hong et al., 2016; Tang, 2017). Since literature attested an overreliance on Hofstede's framework and calls for other theories to thoroughly explore intercultural differences (Guo et al., 2020), we choose the SCST as an alternative theoretical framework capable of elucidating how consumers from different cultures are cognitively processing information. Building upon an established research model from literature, the results proved that the model is adequate within the German sample, whereas discriminant validity issues arose among Chinese consumers. Reflecting on the assumptions inherent to SCST and analyzing prior OCR literature based on the cultural background of the corresponding samples, we were able to explain theoretically and empirically validate that East Asians perceive several variables holistically when evaluating OCRs' credibility.

Appendix A: Measurement model evaluation of established model

Table A.1 Assessment of the Fornell-Larcker criterion for the German sample

	ArgQual	AuthorCred	RevConsist	RevRating	PI	RevCred	RevSided
ArgQual	0.881						
AuthorCred	0.742	0.912					
RevConsist	0.484	0.510	0.864				
RevRating	0.612	0.653	0.510	0.896			
PI	0.586	0.541	0.517	0.458	0.907		
RevCred	0.731	0.799	0.540	0.569	0.557	0.873	
RevSided	0.411	0.448	0.262	0.383	0.202	0.441	0.896

Note: ArgQual = Argument Quality, AuthorCred = Author Credibility, RevConsist = Review Consistency, RevCred = Review Credibility, RevRating = Review Rating, RevSided = Review Sidedness, PI = Purchase Intention.

Table A.2 Assessment of cross-loadings for the German sample

	ArgQual	AuthorCred	RevConsist	RevCred	RevRating	PI	RevSided
ArgQual_1	**0.898**	0.653	0.446	0.656	0.561	0.572	0.367
ArgQual_2	**0.877**	0.662	0.390	0.636	0.517	0.447	0.388
ArgQual_4	**0.867**	0.645	0.444	0.640	0.539	0.527	0.332
AuthorCred_2	0.644	**0.854**	0.381	0.625	0.591	0.394	0.432
AuthorCred_3	0.707	**0.942**	0.499	0.786	0.603	0.543	0.407
AuthorCred_4	0.679	**0.938**	**0.505**	0.762	0.598	0.529	0.397
RevConsist _1	0.457	0.508	**0.872**	0.538	0.503	0.499	0.282
RevConsist _2	0.381	0.370	**0.851**	0.399	0.403	0.397	0.200
RevConsist _3	0.407	0.425	**0.869**	0.442	0.399	0.431	0.183
RevCred_1	0.636	0.698	0.519	**0.906**	0.532	0.517	0.399
RevCred_2	0.585	0.634	0.429	**0.868**	0.435	0.457	0.352
RevCred_3	0.639	0.687	0.414	**0.790**	0.481	0.437	0.388
RevCred_4	0.689	0.764	0.515	**0.923**	0.532	0.528	0.400
RevRating _1	0.567	0.591	0.467	0.521	**0.894**	0.396	0.384
RevRating _2	0.536	0.592	0.465	0.518	**0.906**	0.407	0.322
RevRating _3	0.543	0.574	0.438	0.489	**0.889**	0.430	0.324
PI_1	0.600	0.543	0.511	0.564	0.486	**0.895**	0.215
PI_2	0.520	0.492	0.458	0.490	0.391	**0.926**	0.177
PI_3	0.522	0.481	0.472	0.517	0.419	**0.923**	0.176
PI_4	0.466	0.432	0.423	0.431	0.349	**0.883**	0.158
RevSided_1	0.417	0.442	0.253	0.419	0.387	0.191	**0.910**
RevSided_2	0.315	0.357	0.214	0.369	0.295	0.171	**0.882**

Note: Indicator loadings on their assigned constructs are highlighted in bold. ArgQual = Argument Quality, AuthorCred = Author Credibility, RevConsist = Review Consistency, RevCred = Review Credibility, RevRating = Review Rating, RevSided = Review Sidedness, PI = Purchase Intention.

Table A.3 Assessment of the Fornell-Larcker criterion for the Chinese sample

	ArgQual	AuthorCred	RevConsist	RevRating	PI	RevCred	RevSided
ArgQual	0.814						
AuthorCred	0.775	0.892					
RevConsist	0.408	0.363	0.893				
RevRating	0.741	0.788	0.375	0.883			
PI	0.739	0.689	0.408	0.683	0.914		
RevCred	0.820	0.833	0.370	0.742	0.693	0.896	
RevSided	0.595	0.614	0.268	0.565	0.518	0.631	0.919

Note: ArgQual = Argument Quality, AuthorCred = Author Credibility, RevConsist = Review Consistency, RevCred = Review Credibility, RevRating = Review Rating, RevSided = Review Sidedness, PI = Purchase Intention.

Table A.4 Assessment of cross-loadings for the Chinese sample

	ArgQual	AuthorCred	RevConsist	RevCred	RevRating	PI	RevSided
ArgQual_1	**0.882**	0.772	0.374	0.803	0.714	0.695	0.581
ArgQual_2	**0.860**	0.628	0.259	0.677	0.614	0.583	0.464
ArgQual_4	**0.687**	0.437	0.390	0.466	0.438	0.507	0.379
AuthorCred_2	0.646	**0.840**	0.260	0.675	0.656	0.533	0.529
AuthorCred_3	0.722	**0.919**	0.357	0.776	0.716	0.660	0.557
AuthorCred_4	0.706	**0.916**	0.347	0.774	0.735	0.645	0.558
RevConsist _1	0.395	0.363	**0.905**	0.369	0.388	0.384	0.278
RevConsist_2	0.357	0.332	**0.883**	0.328	0.324	0.353	0.204
RevConsist_3	0.335	0.264	**0.891**	0.284	0.281	0.351	0.230
RevCred_1	0.747	0.750	0.375	**0.906**	0.701	0.641	0.569
RevCred_2	0.731	0.728	0.324	**0.884**	0.661	0.595	0.539
RevCred_3	0.725	0.736	0.304	**0.885**	0.653	0.621	0.568
RevCred_4	0.736	0.771	0.323	**0.910**	0.646	0.629	0.587
RevRating _1	0.670	0.692	0.339	0.656	**0.891**	0.596	0.503
RevRating _2	0.632	0.691	0.330	0.633	**0.869**	0.606	0.496
RevRating _3	0.661	0.704	0.325	0.675	**0.887**	0.607	0.497
PI_1	0.696	0.661	0.410	0.676	0.648	**0.915**	0.487
PI_2	0.676	0.619	0.370	0.620	0.621	**0.910**	0.445
PI_3	0.673	0.631	0.351	0.628	0.626	**0.919**	0.472
PI_4	0.652	0.604	0.356	0.607	0.598	**0.909**	0.488
RevSided_1	0.568	0.553	0.234	0.586	0.520	0.488	**0.914**
RevSided_2	0.513	0.564	0.254	0.563	0.508	0.454	**0.906**

Note: Indicator loadings on their assigned constructs are highlighted in bold. ArgQual = Argument Quality, AuthorCred = Author Credibility, RevConsist = Review Consistency, RevCred = Review Credibility, RevRating = Review Rating, RevSided = Review Sidedness, PI = Purchase Intention.

Appendix B: Measurement model evaluation of culturally adapted model

Table B.1 Assessment of the Fornell-Larcker criterion

	RevConsist	PI	RevCred	RevSided
RevConsist	0.893			
PI	0.408	0.914		
RevCred	0.370	0.694	0.896	
RevSided	0.268	0.518	0.632	0.910

Note: RevConsist = Review Consistency, RevCred = Review Credibility, RevSided = Review Sidedness, PI = Purchase Intention.

Table B.2 Assessment of cross-loadings

	RevConsist	RevCred	PI	RevSided
RevConsist _1	**0.905**	0.369	0.385	0.278
RevConsist_2	**0.883**	0.328	0.354	0.204
RevConsist_3	**0.891**	0.284	0.351	0.230
RevCred_1	0.375	**0.907**	0.641	0.569
RevCred_2	0.324	**0.882**	0.595	0.539
RevCred_3	0.304	**0.885**	0.621	0.568
RevCred_4	0.323	**0.910**	0.629	0.587
PI_1	0.410	0.676	**0.915**	0.487
PI_2	0.370	0.620	**0.910**	0.445
PI_3	0.351	0.628	**0.919**	0.472
PI_4	0.356	0.607	**0.909**	0.488
RevSided_1	0.234	0.586	0.488	**0.914**
RevSided_2	0.254	0.563	0.454	**0.906**

Note: Indicator loadings on their assigned constructs are highlighted in bold. RevConsist = Review Consistency, RevCred = Review Credibility, RevSided = Review Sidedness, PI = Purchase Intention.

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