Wagner, Gerhard; Fota, Anne; Schramm-Klein, Hanna; Steinmann, Sascha

Article

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Schmalenbach Journal of Business Research (SBUR)

Provided in Cooperation with:
Schmalenbach-Gesellschaft für Betriebswirtschaft e.V.

Suggested Citation: Wagner, Gerhard; Fota, Anne; Schramm-Klein, Hanna; Steinmann, Sascha (2023) : Development of a motivation-trust-vulnerability (MTV) framework for cross-border online shopping: A cross-national application to Chinese and German consumers, Schmalenbach Journal of Business Research (SBUR), ISSN 2366-6153, Springer, Heidelberg, Vol. 75, Iss. 3, pp. 389-414, https://doi.org/10.1007/s41471-023-00170-2

This Version is available at:
https://hdl.handle.net/10419/289515

Schmalenbachs Zeitschrift für betriebswirtschaftliche Forschung (2023) 75:389–414
https://doi.org/10.1007/s41471-023-00170-2

ORIGINAL ARTICLE

Development of a Motivation–Trust–Vulnerability (MTV) Framework for Cross-Border Online Shopping: A Cross-National Application to Chinese and German Consumers

Gerhard Wagner · Anne Fota · Hanna Schramm-Klein · Sascha Steinmann

Received: 12 April 2022 / Accepted: 10 August 2023 / Published online: 13 September 2023

Abstract Building on the motivation–ability (MA) theoretical framework, we develop a motivation–trust–vulnerability (MTV) framework to explain behavioral decision making in situations of uncertainty and vulnerability. We apply our new framework to cross-border online shopping, which is characterized by uncertain benefits, potential losses, and increased vulnerability of making cross-border online purchases at foreign online vendors. The MTV framework (1) explains the mechanism of cross-border online shopping by considering the effects and interactions of motivation, trust, and vulnerability (2), offers a new conceptualization of perceived vulnerability and (3) is applicable to culturally and economically distinct country markets. The findings from two major e-commerce markets (China and Germany; N = 808) support our framework and suggest that perceived vulnerability acts as an obstacle that prevents consumers from cross-border online shopping. However, in interaction with trust towards foreign online vendors perceived vulnerability positively affects the relationship between motivating factors and cross-border online purchase intentions. Our findings help explaining consumers' cross-border online purchasing intentions and provide guidance for retail managers and policy makers on recognizing and coping with trust and vulnerability in international relations.

Gerhard Wagner · ✉ Anne Fota · Hanna Schramm-Klein
Universität Siegen, Unteres Schloß 3, 57072 Siegen, Germany
E-Mail: fota@marketing.uni-siegen.de

Gerhard Wagner
E-Mail: gerry.wagner@gmx.de

Hanna Schramm-Klein
E-Mail: schramm-klein@marketing.uni-siegen.de

Sascha Steinmann
Aarhus Universitet, Fuglesangs Allé 4, 8210 Aarhus V, Denmark
E-Mail: sst@mgmt.au.dk

Keywords Cross-Border E-Commerce · Consumer Behavior · Distribution Channels · Retailing · Structural Equation Modeling

1 Introduction

Cross-border online shopping is a recent development fostered by globalization and the increasing digitalization of markets. According to a study by DPD and Kantar (2018) conducted among 24,328 consumers across 21 countries, 58% of online shoppers have already bought goods online from foreign vendors. Moreover, worldwide cross-border e-commerce transactions develop faster than domestic online retail in most country markets, highlighting the relevance of cross-border online purchases for firms, vendors and brands (Payvision 2017). When online shoppers are actively crossing the national country border to shop online, several conditions change: Cross-border online shoppers are motivated to digitally cross country borders for specific benefits, such as better prices and more choice when shopping with foreign online vendors (Wagner et al. 2016). However, cross-border online shopping is still highly unregulated, and a formal legal system to protect potential cross-border online shoppers is mostly lacking (BEUC 2017). Additionally, the complexity of the combination of international and digital market activities, as it is the case with cross-border online shopping, demands increased knowledge and skills of the consumers involved. As a result, cross-border online shopping entails additional benefits that motivate cross-border online purchases as well as requirements (knowledge and skills) that, if lacking, increase consumer vulnerability for cross-border online shoppers (Guo et al. 2018). In this research, we focus and shed light especially on the role of vulnerability in the context of cross-border online-shopping.

Vulnerability in cross-border online shopping includes lack of knowledge (e.g., about international customer rights, tariffs, and duties) and lack of skills, (e.g., language capabilities, securing international payments), which are mainly barriers that might not arise in a national context, but explicitly in an international context (Kawa and Zdrenka 2016; Safari and Thilenius 2013). Therefore, cross-border online shoppers are vulnerable when their access to resources (e.g., knowledge) and control over resources (e.g., skills to judge foreign online vendors) are restricted in the international marketplace (Hill and Sharma 2020). Because of these restrictions, trust towards foreign online vendors has been suggested to play a crucial role in reducing the consumers' perceived uncertainty based on the psychic distance between the consumer and the foreign online vendor (Safari and Thilenius 2013). Also, Rousseau et al. (1998) assume that the willingness to accept vulnerability is increased by trust. Consequently, the interrelationship between consumer vulnerability and trust may influence consumers' international online shopping behavior, which in turn affects online retailers' international marketing strategy.

This research contributes to international business knowledge by answering the following research question: How does the interrelationship of trust and vulnerability affect cross-border online purchasing? By addressing this research question, our study contributes to developing international business theory in three ways. First, we develop and empirically test a conceptual framework that helps to understand

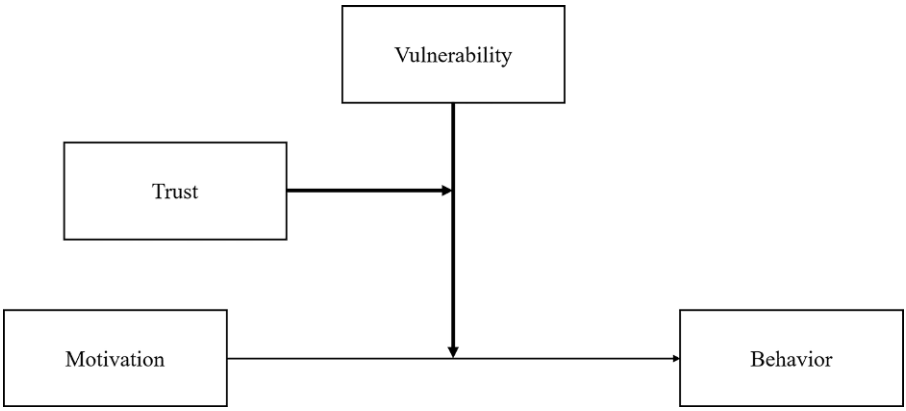


Fig. 1 Conceptual model of the motivation-trust-vulnerability framework

the relationship of motivation, trust and vulnerability (MTV) in the context of cross-border online shopping. By investigating this relationship, we clarify how and under what conditions trust and vulnerability affect cross-border online shopping. Second, we empirically test a new conceptualization of perceived vulnerability. As Shultz and Holbrook (2009) suggest, this conceptualization uses lack of knowledge and lack of skills as two underlying dimensions of vulnerability. In particular, we propose and explain why, in the context of cross-border online shopping, vulnerability should be conceptualized and measured through lack of perceived cross-border online shopping knowledge and lack of perceived cross-border online shopping skills to avoid common evaluation biases when consumers should judge their own vulnerability (Jones and Middleton 2007). Third, we account for cross-national differences by testing our model in two culturally and economically distinct large e-commerce country markets (Germany and China). This cross-national investigation provides a first indication of the generalizability of the MTV framework. Moreover, as the practical contribution of this study with regard to international business management, we illustrate the interrelationships of benefits and trust towards foreign online vendors (two dimensions that can be directly influenced by firms' marketing activities) with the perceived vulnerability of cross-border online shopping (an external dimension that arises from the uncertain environment of cross-border online shopping). We also discuss how retail managers and policy makers can cope with the vulnerability of cross-border online shoppers and perform trust-building activities.

2 Development of a Motivation–Trust–Vulnerabilty (MTV) Framework

The theoretical foundation of our motivation-trust-vulnerability framework is based on expectancy theory (Vroom 1964), self-efficacy theory (Bandura 1977) and trust theories (Morgan and Hunt 1994), which we will explain in detail in the following. We use Merton's (1957) motivation-ability (MA) theoretical framework as a conceptual starting point to explain the effect of how cross-border online shopping benefits

motivate cross-border online purchases and how vulnerability moderates this relationship. Vroom's (1964) expectancy theory can explain the development of the motivation to make cross-border online purchases based on specific benefits of cross-border online shopping. Moderating effects of vulnerability are rooted in Bandura's (1977) self-efficacy theory, which states that individuals try to assess whether they have the required skills or knowledge to successfully perform a particular behavior, in our case cross-border online purchasing. We refer to trust theories, for example brought up by Morgan and Hunt (1994), to explain the moderating effect of trust in our model.

Our conceptual starting point, the original MA framework, postulates that a combination of motivation and ability shapes the nature and intensity of actions (Merton 1957). Based on the general influences of motivation and ability, scholars can apply the MA framework to determine the tendency to perform any specific behavior (Burnkrant 1976). Therefore, scholars in various fields, including marketing (e.g., Grewal et al. 2001; Sprott et al. 2001) and international business (e.g., Minbaeva et al. 2003; Bahadir et al. 2015), adopt and apply the MA framework in their studies. In line with these studies, we use the MA framework as a starting point to explain how the relationship of perceived cross-border online shopping benefits that motivate cross-border online purchases is moderated by trust and vulnerability in the context of cross-border online purchases (see Fig. 1). In the following, we theorize and explain the selection and interrelationship of motivation, trust and vulnerability in our framework, identify variables that reflect each of these causes and derive hypotheses.

2.1 Consumers' Motivation for Cross-Border Online Shopping

According to the MA framework, the psychological driver that influences the degree to which an individual is inclined to perform a behavior is motivation (Rauch et al. 2015). Expectancy theory (Vroom 1964) argues that behavior results from conscious choices among alternatives whose purpose is to maximize benefits. In the context of cross-border online shopping, consumers are motivated by the anticipation of benefits which are related to cross-border online shopping., e.g., cheaper prices, greater product selection (Wagner et al. 2016). Previous studies empirically validate the motivational effect of shopping benefits on online purchasing behavior, and from the theoretical perspective, there is a consensus on the relationship (e.g., Forsythe et al. 2006). Therefore, we state that this is a well-known argument, and we assume that the relationship between consumers' shopping motivation based on perceived benefits and shopping behavior will hold for cross-border online shopping. Thus, this direct effect serves merely as our baseline hypothesis, as we focus on the less understood interaction effects (Andersson et al. 2014). Our baseline hypothesis postulates the following:

Hypothesis 1 Cross-border online purchases are motivated by cross-border online shopping benefits.

2.2 Vulnerability in the Context of Cross-Border Online Shopping

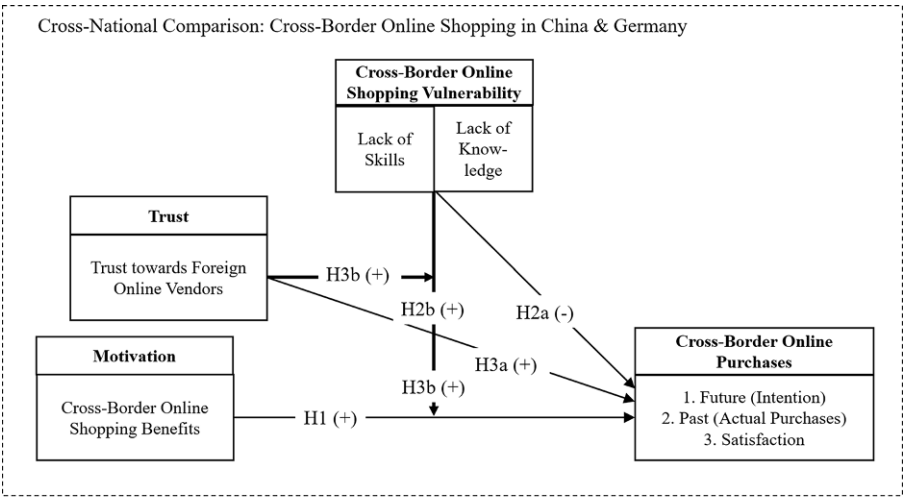
Drawing on the MA framework, we first elaborate the relationship of ability and vulnerability in the context of cross-border online shopping and then argue why we include vulnerability in our framework. Ability refers to the physiological and cognitive capabilities that enable an individual to perform a behavior effectively (Rauch et al. 2015). To conceptualize ability, we follow previous research that regards ability as an individual's knowledge and capability to acquire the relevant skills to carry out a particular task (e.g., Siemsen et al. 2008). Theoretically, this conceptualization of ability and its effects is rooted in Bandura's (1977) self-efficacy theory, which states that individuals assess whether they have the required skills or knowledge desired to achieve their goals through their beliefs about their ability to successfully perform a particular behavior. Stewart and Pavlou (2002) suggest that a consumer's ability to complete an online transaction represents an attempt by the consumer to acquire information in a structure in which the desired information is uncertain. For cross-border online purchases, consumers need to acquire even more knowledge and skills to compensate for the additional uncertainties of international online transactions (Safari and Thilenius 2013). For example, cross-border online shoppers need specific knowledge and skills to be able to calculate the total cost of a cross-border online purchase (which possibly includes the exchange rate, delivery costs, customs duty, and tariffs). If consumers do not possess this financial knowledge and cannot acquire these skills, they are financially vulnerable with regard to cross-border online shopping. Further areas of cross-border online shopping vulnerability involve legal (e.g., asserted rights), cultural (e.g., unknown language of customer service), physical (e.g., harmful products) and privacy (e.g., data skimming) factors (Guo et al. 2018).

To integrate the concepts of ability and vulnerability, we adopt the perspective of Shultz and Holbrook (2009), who state that lack of knowledge and the lack of capabilities to acquire the relevant skills and information to perform a specific task (i.e., lack of ability) create consumer vulnerability. In particular, Shultz and Holbrook (2009) suggest a two-dimensional conceptualization of vulnerability in which consumers are doubly vulnerable if they (1) do not know what is beneficial for them and (2) do not have the skills or other resources needed to acquire what would benefit them. Regarding this conceptualization, ability and vulnerability are the opposite ends on a continuum, i.e., higher levels of ability lead to lower levels of vulnerability and vice versa. This conceptualization is in line with Hill and Sharma (2020), who define consumer vulnerability as a state in which consumers are subject to harm because their access to and control over resources are restricted in ways that significantly inhibit their ability to function in the marketplace. With regard to this conceptualization lack of knowledge reflects a resource limitation, while lack of capabilities to acquire the relevant skills reflects restricted control (Hill and Sharma 2020). We include cross-border online shopping vulnerability in our framework because vulnerability is directly related to the uncertainties of cross-border online shopping, i.e., the losses related to obtaining the expected gains (Safari and Thilenius 2013). This new conceptualization of perceived vulnerability (reflected by lack of ability), which we empirically test in this research, refers to the uncertainties of

cross-border online shopping and the related vulnerability of international online shoppers. It also has another advantage: Because it is often difficult for individuals to assess their own vulnerability, the evaluation of one's own ability instead of vulnerability should avoid social desirability bias with regard to the interpretation of vulnerability as weakness or naivety (Jones and Middleton 2007).

Moreover, we propose that perceived vulnerability will have two contradictory effects on consumer behavior: a negative direct effect on cross-border online purchases and a positive moderating effect on the relationship between cross-border online shopping benefits and cross-border online purchases. A moderator variable is a variable that modifies or changes the strength or direction of the relationship between two other variables. We consider vulnerability as a moderator variable because vulnerability can influence the relationship between cross-border online shopping benefits and cross-border online shopping purchases. Consumers who perceive more uncertainties associated with online purchases will be deterred from online shopping (Forsythe et al. 2006). Therefore, we theorize that the more insecure consumers feel with regard to their skills and knowledge with regard to cross-border online shopping, the more vulnerable they will feel and the greater the likelihood that they will refrain from cross-border online purchasing. However, the existence of cross-border online shopping vulnerability might also cause consumers to focus on benefits that motivate cross-border online purchases and repress potential negative outcomes, thus leading to an overestimation of the benefits that they will obtain from cross-border online shopping (Jones and Middleton 2007). As our theoretical argument for the positive moderating effect of vulnerability on the relationship between cross-border online shopping benefits and cross-border online purchases, we propose that because vulnerability involves lack of knowledge and lack of skills, the perceived benefits that are easily accessible (e.g., cheaper prices) overlay the inherent vulnerability, increasing the motivating effect on cross-border online purchase behavior. This effect is due to an imbalance between gains and losses in the cognitive weighting mechanism (Kahneman and Lovallo 1993). In particular, potential losses are not perceived because they are not known (because of no previous experiences or information), or they are cognitively repressed as a strategy of dissonance reduction (Harmeling et al. 2015). Therefore, we conclude that vulnerable consumers, i.e., individuals who have less knowledge and skills with regard to cross-border online shopping, might be more motivated to cross-border online shopping because they directly experience certain benefits of cross-border online shopping without having the knowledge or the skills to assess the uncertainties. We can model the proposed relationship as a moderating (two-way interaction) effect in which the impact of perceived benefits on cross-border online purchases is strengthened when the level of vulnerability is higher. In summary, we propose the following:

Hypothesis 2 Perceived vulnerability has (a) a negative direct effect on cross-border online purchases but (b) positively moderates the relationship between cross-border online shopping benefits and cross-border online purchases.



Note: The thicker lines are the relationships of focus. H3b appears twice to indicate the moderated moderation.

Fig. 2 Research model of the motivation-trust-vulnerability framework for cross-border online shopping

2.3 Trust Towards Foreign Online Vendors

We refer to trust theories, for example brought up by Morgan and Hunt (1994), to explain the effect of trust in our model. In online environments in which vendors' true intentions are especially difficult to assess, trust is a crucial antecedent of behavioral activities (Bleier and Eisenbeiss 2015). As research on Internet shopping argues that shopping online inherently involves higher levels of uncertainty than does shopping at a physical store, we argue that cross-border online shopping involves higher levels of uncertainty than does domestic online shopping (Lim et al. 2004). Potential cross-border online shoppers often lack information on foreign online vendors (e.g., whether the store is legitimate, what payment service is available or whether the products offered are genuine or counterfeit). When information about foreign online vendors is lacking, trust serves as a key foundation on which online shoppers base their purchase decisions (Urban et al. 2009). Therefore, in the uncertain environment of cross-border e-commerce, trust functions as a catalyst for transactions, as it reduces perceived risks (Pavlou 2003). Consequently, we theorize that consumers who generally trust foreign online vendors tend to be more tolerant of a higher level of uncertainty when transacting with foreign vendors, which should positively affect their cross-border online purchase behavior.

While we control for the above postulated direct effect of trust towards foreign online vendors, our focus is on the interaction effect of trust and perceived vulnerability on the relationship between cross-border online shopping benefits that motivate cross-border purchases, i.e., we postulate a three-way interaction in which trust moderates the moderating effect of perceived vulnerability (see Fig. 2). Our argumentation for this three-way interaction effect derives from the theoretical rationale of the relationship between trust and vulnerability. Trust is a way of dealing with vulnerability such that individuals who trust still feel vulnerable but the more

they trust, the less they expect to actually be harmed (Tsui-Auch and Möllering 2010). Previous research discusses the relationship between perceived vulnerability and trust with regard to whether trust comes before or after vulnerability (Bigley and Pearce 1998). We follow the perspective of Mayer et al. (1995), who assume that trusting individuals start from a neutral position from which they decide to increase or decrease vulnerability. In this sense, trust is not risk taking per se; rather, it is the willingness to take risk (Mayer et al. 1995). Because trust increases one's willingness to accept uncertainties and risks, we assume that trust towards foreign online vendors increases the moderating effect of perceived vulnerability, which—as stated in H2—moderates the relationship between cross-border online shopping benefits and cross-border online purchases (Rousseau et al. 1998). Accordingly, we postulate the following:

Hypothesis 3 Trust towards foreign online vendors has (a) a positive direct effect on cross-border online purchases and (b) positively moderates the moderating effect of vulnerability on the relationship between cross-border online shopping benefits and cross-border online purchases.

Our research model of the MTV framework for cross-border online shopping summarizes our theoretical reasoning, as illustrated in Fig. 2. In line with previous research, we combine three theories in our MTV framework to give a more complete account of the researched phenomenon (Sparrowe and Mayer 2011). By doing this, we also take into account that the underlying theoretical mechanism linking the relationship between moderator and dependent variable must differ from the theoretical mechanism that influences the main relationship (Andersson et al. 2014).

3 Method

3.1 Procedure and Sample

To test the generalizability of our framework, we select two culturally and economically distinct country markets: China and Germany. We select China and Germany because both countries show certain differences with regard to the cultural dimensions uncertainty avoidance and individualism–collectivism (see Table 1), which research identifies as being the most relevant to online shopping because of their link to the willingness to accept the potential risks of online shopping and to trust unknown online vendors (Lim et al. 2004). Additionally, we select China and Germany because both countries are among the five largest e-commerce markets worldwide, indicating a large tendency to engage in and the relevance of online shopping (Eshopworld 2018). In particular, there are relevant differences in market size, economic conditions, market development and culture that can lead to discriminative market factors between Germany and China and that can affect cross-border online shopping. A comparison between these two country markets based on various economic and cultural criteria is presented in Table 1.

We generate data for our further analyses and hypothesis testing using two online questionnaires that are identical with regard to their content (both in national lan-

Table 1 Economical and cultural comparison between China and Germany

	China	Germany	Source
Population (2017)	1.4 billion	82.7 million	The World Bank (2019)
GNI per capita (2017)	8690 US$	43,490 US$	
Imports of goods and services (2017)	2.2 trillion US$	1.5 trillion US$	
Exports of goods and services (2017)	2.4 trillion US$	1.7 trillion US$	
Median age (2018)	37.4	47.1	World Population Review (2019)
Online shoppers (2018)	1 billion	63.9 million	Eshopworld (2018)
Online sales (2018)	636.1 billion US$	70.4 billion US$	
Uncertainty avoidance score	30	65	Hofstede (2019)
Individualism score	20	67	

guages: German and Mandarin Chinese). For this purpose, we perform translation-back-translation (from German to Mandarin Chinese), conducted by four independent coders (Chinese native speakers living in Germany with fluent German language proficiency), to guarantee translation adequacy while considering the cultural context (Chidlow et al. 2014). We distribute the Chinese questionnaires via e-mail and social networks, generating a convenience sample of Chinese online shoppers. To collect the German data, we use a local research agency panel of adult online shoppers. Before analyzing the data, we eliminate the data sets of all participants with a processing time that is less than half the median (less than 10 min) because this low processing time indicates a low level of engagement with regard to reading and answering all the questions. Furthermore, we conduct plausibility checks, e.g., eliminating the data of the participants whose answers contain variances of zero among all items. We obtain a data set consisting of $N = 808$ consumers, of whom 452 are from Germany (51.8% female, $M_{age} = 44.02$ years) and 356 are from China (54.5% female, $M_{age} = 28.22$ years). A total of 64.2% of the German and 53.4% of the Chinese respondents have already made a cross-border online purchase. To account for differences in demographics between the Chinese and German samples, we include gender, age, income and online shopping affinity (number of online purchases within the last twelve months) as control variables in our analysis.

3.2 Measurements

We rely on established multi-item scales from previous studies that we identify and modify to fit the context of our study (see Table 2). To capture future cross-border online purchases, we adapt Pavlou's (2003) online purchasing intention scale, which consists of three items. To account for actual cross-border online purchasing behavior, we use the answer to the question of whether the respondents have made cross-border online purchases in the past. This variable is a dichotomous variable reflecting past cross-border online purchase behavior (0 = not made cross-border online purchases; 1 = made cross-border online purchases). We evaluate satisfaction

Table 2 Measurement instruments: Factor Loadings

Measurement instrument (China/Germany) (7-point Likert scale: 1 = strongly agree, 7 = strongly disagree)	Factor Loading	
	China	Germany
Intention to cross-border online purchase (α = 0.90/0.98, CR = 0.89/0.98, AVE = 0.74/0.95)		
Given the chance, I intend to visit foreign online vendors to shop online	0.87	0.98
Given the chance, I expect to order items from foreign online vendors in the future	0.94	0.97
I will likely purchase items from foreign online vendors	0.76	0.97
Cross-border online shopping benefits (α = 0.83/0.88, CR = 0.84/0.87, AVE = 0.63/0.70)		
I think purchasing from an online vendor outside my home country would be beneficial	0.78	0.84
I think purchasing from an online vendor outside my home country can lead to good results	0.86	0.81
I think purchasing from an online vendor outside my home country can have certain advantages	0.73	0.85
Trust towards foreign online vendors (α = 0.92/0.94, CR = 0.92/0.95, AVE = 0.79/0.85)		
Foreign online vendors are reliable	0.88	0.90
Foreign online vendors are trustworthy	0.92	0.97
I trust foreign online vendors	0.87	0.90
Cross-Border Online Shopping Vulnerability		
Lack of perceived knowledge (α = 0.91/0.96)		
I know everything I need to know to make wise foreign online purchases. *(R)*	0.88	0.94
I know everything I need to know to competently purchase from foreign online vendors. *(R)*	0.88	0.97
I know everything I need to know to successfully purchase from foreign online vendors. *(R)*	0.87	0.93
Lack of perceived skills (α = 0.88/0.98)		
I can easily acquire all skills and information to make wise foreign online purchases. *(R)*	0.79	0.97
I can easily acquire all skills and information to competently purchase from foreign online vendors. *(R)*	0.85	0.98
I can easily acquire all skills and information to successfully purchase from foreign online vendors. *(R)*	0.88	0.96

Factor loadings derived from CFA in AMOS25
α Cronbach's alpha, *CR* composite reliability, *AVE* average variance extracted, *(R)* reverse-coded

with cross-border online shopping, which is a variable that indicates an outcome of the expectations and actual performance of cross-border online purchases, only for the respondents who have already made cross-border online purchases in the past. To measure satisfaction, we adapt three items (e.g., "I think that I did the right thing when I purchased at foreign online vendors."; α = 0.77) from Cronin et al. (2000). To measure perceived cross-border online shopping benefits, we adapt three items from Meuter et al. (2005) to the context of our study. Trust is measured using a three-item scale (Yoon 2009). Perceived vulnerability is measured as a reflective construct with a two-factor structure, with each factor consisting of three items, that encompasses perceived lack of knowledge and perceived lack of skills, as proposed

Table 3 Discriminant validity assessment and inter-construct correlations: Chinese sample (N = 356)

	Cross-Border Online Purchase Intention	Cross-Border Online Shopping Benefits	Trust towards Foreign Online Vendors	Cross-Border Online Shopping Vulnerability
Cross-Border Online Purchase Intention	**0.86**	–	–	–
Cross-Border Online Shopping Benefits	0.72***	**0.79**	–	–
Trust towards Foreign Online Vendors	0.69***	0.71***	**0.89**	–
Cross-Border Online Shopping Vulnerability	–0.35***	–0.44***	–0.39***	**0.98**

Correlations are shown below the diagonal, AVEs on the main diagonal (bold)
*** if $p < 0.01$

by Shultz and Holbrook (2009). We adapt a measurement scale for perceived lack of knowledge and perceived lack of skills from Grewal et al. (2001) to address the lack of a compatible vulnerability scale in the literature that captures consumers' perceived lack of knowledge and skills to successfully conduct cross-border online shopping. By measuring perceived vulnerability with items of ability dimensions, we decide to use a reverse-coded scale approach; studies usually apply such an approach to measure constructs that have negative connotations or that are difficult for respondents to assess, such as emotional stability (Cucina et al. 2019), job complexity (Morgeson and Humphrey 2006) or role ambiguity (Rizzo et al. 1970). We measure all constructs via seven-point Likert scales. Additionally, we pretest the measurement scales via an online survey with students from both countries to assess the reliability and comprehensibility of our adapted scales; the pretesting confirms the reliability and comprehensibility of our measurement instruments.

3.3 Reliability and Validity

We investigate the dimensionality, reliability, and validity of our construct measures via exploratory and confirmatory factor analysis (CFA). The average variance extracted (AVE) values not less than 0.63 for all scales, the Cronbach's alpha values of 0.83 and above and the composite reliability (CR) values of 0.84 and above are all satisfactory and reflect high levels of scale consistency (see Table 2). In addition, we assess all reflective scales for discriminant validity by applying Fornell and Larcker's (1981) criterion, indicating that discriminant validity should not be a problem because no construct shares more variance with any other construct than with its own indicators (see Tables 3 and 4). To ensure that multicollinearity was not a problem within our study, we tested variance inflation factors (VIF), which showed all a measurement below 2, therefore under the recommended threshold of 10. Moreover, we checked the inter-construct correlations between all variables

Table 4 Discriminant validity assessment and inter-construct correlations: German sample (N = 452)

	Cross-Border Online Purchase Intention	Cross-Border Online Shopping Benefits	Trust towards Foreign Online Vendors	Cross-Border Online Shopping Vulnerability
Cross-Border Online Purchase Intention	**0.97**	–	–	–
Cross-Border Online Shopping Benefits	0.71***	**0.83**	–	–
Trust towards Foreign Online Vendors	0.68***	0.63***	**0.92**	–
Cross-Border Online Shopping Vulnerability	–0.68***	–0.59***	–0.65***	**0.86**

Correlations are shown below the diagonal, AVEs on the main diagonal (bold)
*** if $p < 0.01$

of our model as well as between of all control variables for both samples and found no indication for multicollinearity.

To conduct CFA of the measurement model on the Chinese and German datasets individually, we use the maximum likelihood (ML) estimation procedure with AMOS 25. The model yields an acceptable model fit with the sample data from China (χ^2/df = 3.71; RMSEA = 0.09; CFI = 0.95; TLI = 0.93; SRMR = 0.05) and Germany (χ^2/df = 2.58; RMSEA = 0.06; CFI = 0.99; TLI = 0.98; SRMR = 0.03). Each factor loading is statistically significant, and the standardized values are above the recommended threshold of 0.70 (Germany: 0.81 and above; China: 0.73 and above) for all items (Bagozzi and Yi 1988).

3.4 Measurement Invariance

We perform tests of multigroup invariance to examine the equivalence of the proposed measurement model across the two country samples. Following the procedures suggested by Steenkamp and Baumgartner (1998), we first estimate a multigroup CFA model without any restrictions on the parameters across country groups. The overall model fit is sufficient, thus supporting configural invariance (global χ^2/df = 2.52; RMSEA = 0.04; CFI = 0.97; TLI = 0.97; SRMR = 0.03). Next, we assess metric invariance by constraining the factor loadings in the two groups to be equal and comparing this model with another model in which the factor loadings are free to be estimated across groups. The results indicate that the two samples are not fully invariant because the constrained model has a significantly higher chi-square ($\Delta\chi^2(20) = 197.5$, $p < 0.05$). Therefore, we find that there is no full metric invariance (i.e., we cannot analyze a total model using the pooled data of both country groups). However, the test results indicate partial metric invariance; thus, we can estimate two independent models and compare the results (Awanis et al. 2017).

3.5 Common Method Bias

In our analyses, the evaluations of both the antecedents and the outcome measures in the model stem from the same person, which might produce common method bias (Chang et al. 2010). Following the suggestion of Podsakoff et al. (2003) to account for common method variance, we take several approaches and perform several tests. Ex ante, we assure the respondents of the anonymity and confidentiality of the study and indicate that there are no right or wrong answers and that they should answer as honestly as possible. Moreover, we counterbalance the order of questions relating to different scales and constructs and randomize the order of the items in our online survey. We also include a marker variable in our questionnaire that is conceptually independent of the latent variables in our study. Also, we examine the correlation of the marker variable with the other variables from the research model using the correlational technique, which is one of the options proposed by Simmering et al. (2015). Specifically, we choose a variable to measure the consumer's charity participation likelihood (e.g., "How likely are you to donate money?") on a 7-point Likert scale (1 = Not at all likely, 7 = Very likely) because it is theoretically unrelated to the constructs of our model. The marker variable is not significantly related to any of the variables in the model; therefore, the results of the marker variable testing provide further evidence that common method variance is not a serious problem in our study.

4 Results

Because we obtain partial metric invariance, we calculate separate models for the Chinese and German samples. To test our hypotheses, we first conduct covariance-based structural equation modeling (CB-SEM) in AMOS 25. CB-SEM provides a means of accounting for measurement error, allows comparison of nested models for hypothesis testing, and accommodates moderated moderation models. This estimation method makes it possible to test of each of the proposed moderators and to derive further insights into the moderation effect.

All model fit criteria indicate an adequate model specification for both models: China (χ^2/df = 2.94; RMSEA = 0.07; CFI = 0.94; TLI = 0.92; SRMR = 0.04) and Germany (χ^2/df = 2.27; RMSEA = 0.05; CFI = 0.98; TLI = 0.98; SRMR = 0.03). The R^2 values of cross-border online purchase intentions for Germany (0.73) and China (0.64) indicate an adequate model specification for all calculated models. Table 5 shows all the results of our hypothesis tests. Regarding H1, our data support our baseline hypothesis that cross-border online shopping benefits motivate cross-border online purchase intentions for both the Chinese ($\beta = 0.48$, $p < 0.01$) and German ($\beta = 0.49$ $p < 0.01$) samples. Regarding H2a, vulnerability has a negative effect, thus inhibiting cross-border online purchase intentions for both Chinese ($\beta = -0.25$, $p < 0.01$) and German ($\beta = -0.20$, $p < 0.01$) online shoppers.

Regarding the hypothesized two-way interaction effect (H2b) in which vulnerability positively affects the relationship between cross-border online shopping benefits and cross-border online purchase intention, we find that the moderating effect is sig-

Table 5 Effects of cross-border online shopping benefits, trust and vulnerability on cross-border online purchase intention

	Chinese Sample (C)		German Sample (G)		Hypothesis	C/G
	Beta Coefficient	Sig.	Beta Coefficient	Sig.		
Cross-Border Online Shopping Benefits → Cross-Border Online Purchase Intention	$\beta = 0.48$***	0.00	$\beta = 0.49$***	0.00	H1	✔/✔
Cross-Border Online Shopping Vulnerability → Cross-Border Online Purchase Intention	$\beta = -0.20$***	0.00	$\beta = -0.25$***	0.00	H2a	✔/✔
Trust towards foreign online vendors → Cross-Border Online Purchase Intention	$\beta = 0.33$***	0.00	$\beta = 0.28$***	0.00	H3a	✔/✔
Age → Cross-Border Online Purchase Intention	$\beta = 0.04$	0.25	$\beta = -0.07$**	0.01	Control	✖/✔
Gender → Cross-Border Online Purchase Intention	$\beta = 0.04$	0.19	$\beta = -0.03$	0.26	Control	✖/✖
Income → Cross-Border Online Purchase Intention	$\beta = -0.07$**	0.03	$\beta = -0.03$	0.28	Control	✔/✖
Online Shopping Affinity → Cross-Border Online Purchase Intention	$\beta = 0.02$	0.62	$\beta = 0.00$	0.93	Control	✖/✖
Cross-Border Online Shopping Benefits × Cross-Border Online Shopping Vulnerability → Cross-Border Online Purchase Intention	$\beta = 0.11$*	0.05	$\beta = 0.07$	0.20	H2b	✔/✖
Cross-Border Online Shopping Benefits × Trust towards foreign online vendors × Cross-Border Online Shopping Vulnerability → Cross-Border Online Purchase Intention	$\beta = 0.12$**	0.01	$\beta = 0.27$***	0.00	H3b	✔/✔
Sample Size (*N*)	356		452		–	–

Standardized beta coefficients are shown. Direct effects result from the model analysis (PROCESS: Model 3) including interaction effects
C/G China/Germany
*** if $p < 0.01$, ** if $p < 0.05$, * if $p < 0.10$

nificant only for the Chinese sample ($\beta = 0.11$, $p < 0.1$); in contrast, the moderating effect is not significant for the German sample ($\beta = 0.07$, $p = 0.20$). Our data for both the Chinese ($\beta = 0.33$, $p < 0.01$) and German ($\beta = 0.28$, $p < 0.01$) samples demonstrate the positive direct effect of trust on cross-border purchase intentions, supporting H3a. Regarding the proposed three-way interaction in which trust enhances the moderating effect of vulnerability on the relationship between cross-border online shopping benefits and cross-border purchase intention, we find a significant effect for the Chinese sample ($\beta = 0.12$, $p < 0.01$) and an even stronger effect for the German sample ($\beta = 0.27$, $p < 0.01$), supporting H3b. Regarding our control variables, we find only two significant effects. For the Chinese sample, income has a small

Table 6 Effects of cross-border online shopping benefits, trust and vulnerability on past cross-border online purchase in the past

	Chinese Sample (C)		German Sample (G)		Hypothesis	C/G
	Beta Coefficient	Sig.	Beta Coefficient	Sig.		
Cross-Border Online Shopping Benefits → Cross-Border Online Purchase in the Past (yes/no)	$\beta = 0.21$**	0.02	$\beta = 0.20$**	0.01	H1	✔/✔
Cross-Border Online Shopping Vulnerability → Cross-Border Online Purchase in the Past (yes/no)	$\beta = -0.26$***	0.00	$\beta = -0.27$***	0.00	H2a	✔/✔
Trust towards foreign online vendors → Cross-Border Online Purchase in the Past (yes/no)	$\beta = 0.17$**	0.04	$\beta = 0.24$***	0.00	H3a	✔/✔
Age → Cross-Border Online Purchase in the Past (yes/no)	$\beta = -0.03$	0.58	$\beta = -0.23$***	0.00	Control	✖/✔
Gender → Cross-Border Online Purchase in the Past (yes/no)	$\beta = 0.18$***	0.00	$\beta = 0.00$	0.95	Control	✔/✖
Income → Cross-Border Online Purchase in the Past (yes/no)	$\beta = -0.07$	0.16	$\beta = 0.08$*	0.05	Control	✖/✔
Online Shopping Affinity → Cross-Border Online Purchase in the Past (yes/no)	$\beta = 0.01$	0.79	$\beta = 0.03$	0.45	Control	✖/✖
Cross-Border Online Shopping Benefits × Cross-Border Online Shopping Vulnerability → Cross-Border Online Purchase in the Past (yes/no)	$\beta = -0.07$	0.26	$\beta = 0.12$	0.17	H2b	✖/✖
Cross-Border Online Shopping Benefits × Trust towards foreign online vendors × Cross-Border Online Shopping Vulnerability → Cross-Border Online Purchase in the Past (yes/no)	$\beta = -0.02$	0.75	$\beta = 0.35$***	0.00	H3b	✖/✔
Sample Size (*N*)	356		452		–	–

Standardized beta coefficients are shown. Direct effects result from the model analysis (PROCESS: Model 3) including interaction effects
C/G China/Germany
*** if $p < 0.01$, ** if $p < 0.05$, * if $p < 0.10$

effect ($\beta = -0.07$**, $p < 0.05$) on cross-border online purchase intentions, while for the German sample, age affects cross-border online purchase intentions ($\beta = -0.07$**, $p < 0.05$).

As additional robustness tests and because measurement of behavioral intentions is not without criticism with regard to the predictive power of actual purchase behavior, we test our hypotheses with actual cross-border online purchasing behavior

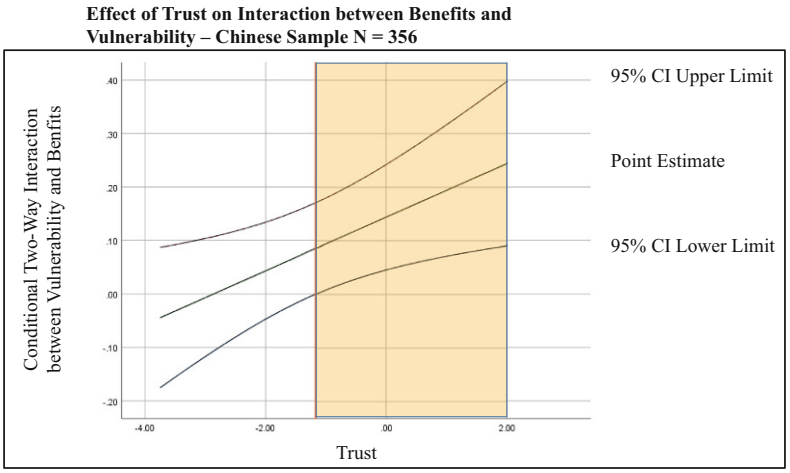
Table 7 Effects of cross-border online shopping benefits, trust and vulnerability on satisfaction with cross-border online purchases

	Chinese Sample (C)		German Sample (G)		Hypothesis	C/G
	Beta Coefficient	Sig.	Beta Coefficient	Sig.		
Cross-Border Online Shopping Benefits → Satisfaction with cross-border online purchases	$\beta = 0.17$	0.21	$\beta = 0.28$***	0.00	H1	✖/✔
Cross-Border Online Shopping Vulnerability → Satisfaction with cross-border online purchases	$\beta = -0.26$***	0.00	$\beta = -0.26$***	0.00	H2a	✔/✔
Trust towards foreign online vendors → Satisfaction with cross-border online purchases	$\beta = 0.24$**	0.04	$\beta = 0.39$***	0.00	H3a	✔/✔
Age → Satisfaction with cross-border online purchases	$\beta = 0.02$	0.70	$\beta = 0.10$**	0.02	Control	✖/✔
Gender → Satisfaction with cross-border online purchases	$\beta = -0.02$	0.77	$\beta = -0.01$	0.70	Control	✖/✖
Income → Satisfaction with cross-border online purchases	$\beta = 0.11$*	0.07	$\beta = -0.01$	0.79	Control	✔/✖
Online Shopping Affinity → Satisfaction with cross-border online purchases	$\beta = 0.04$	0.46	$\beta = -0.03$	0.45	Control	✖/✖
Cross-Border Online Shopping Benefits × Cross-Border Online Shopping Vulnerability → Satisfaction with cross-border online purchases	$\beta = 0.15$	0.21	$\beta = 0.15$**	0.04	H2b	✖/✔
Cross-Border Online Shopping Benefits × Trust towards foreign online vendors × Cross-Border Online Shopping Vulnerability → Satisfaction with cross-border online purchases	$\beta = 0.11$	0.36	$\beta = 0.12$*	0.05	H3b	✖/✔
Sample Size (*N*)	190		290		–	–

Standardized beta coefficients are shown. Direct effects result from the model analysis (PROCESS: Model 3) including interaction effects
C/G China/Germany
*** if $p < 0.01$, ** if $p < 0.05$, * if $p < 0.10$

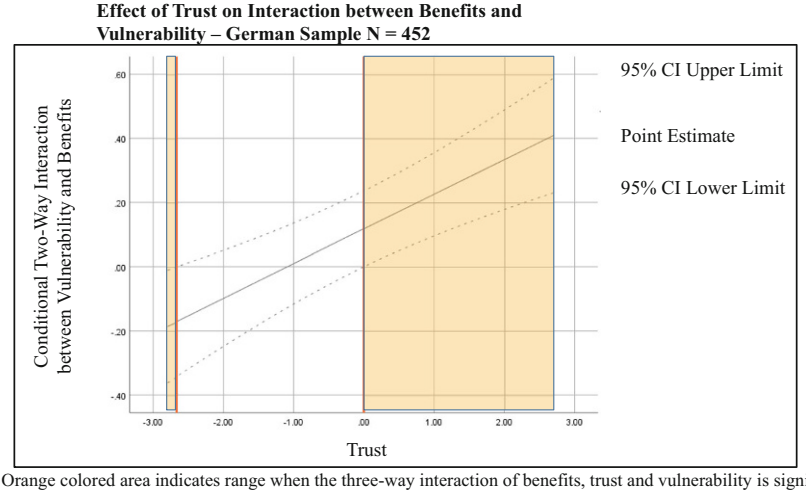
in the past and satisfaction with previous cross-border online purchases as two additional outcome variables (see Tables 6 and 7). While the proposed relationships between benefits, trust and vulnerability lead to comparable effects, fewer of these effects are significant, especially with regard to the Chinese sample (see Tables 6 and 7). However, this finding might be a methodological issue and the result of the smaller sample sizes when we consider actual purchases (Reinartz et al. 2009).

Moreover, we corroborate the CB-SEM analyses by conducting moderated moderation analyses using Model 3 of Hayes' SPSS macro PROCESS (Hayes 2018). In particular, to calculate the moderated moderation effect, we used PROCESS Model 3 procedure in SPSS (Hayes 2018, p. 585). In line with Dawson (2014), this analysis



Note: Orange colored area indicates range when the three-way interaction of benefits, trust and vulnerability is significant.

Fig. 3 Conditional effect of trust on interaction between benefits and vulnerability: Chinese sample (N = 356)



Note: Orange colored area indicates range when the three-way interaction of benefits, trust and vulnerability is significant.

Fig. 4 Conditional effect of trust on interaction between benefits and vulnerability: German sample (N = 452)

method calculates all the necessary interactions and estimates the best-fitting regression model. The output of the PROCESS analyses allows us to draw more accurate conclusions about the three-way interaction effect of trust, vulnerability and benefits. As input for the PROCESS calculation, we create composite scales of each latent factor that are weighted based on each item's factor loading in AMOS. Then, using the PROCESS Model 3 macro (using OLS regression for the intention and satisfaction variable and logistic regression for the dichotomous past purchases variable), we calculate bias-corrected bootstrap confidence intervals using 5000 resamples.

The results of the moderated moderation analyses using PROCESS are similar to those of the CB-SEM analysis; hence, we focus on the additional analysis methods that PROCESS offers. In particular, we want to identify regions in the range of trust in which the effect of vulnerability on the relationship between cross-border online shopping benefits and cross-border online purchases is significant. To do so, we use floodlight analysis based on the Johnson–Neyman technique (Hayes 2018). Floodlight analysis is appropriate when the continuous moderating variable lacks natural values for high vs. low levels (as in the case of trust) and the intention is to overcome the arbitrariness of using standard deviation of the moderator variable, as done in the spotlight analysis (Grinstein and Riefler 2015). Therefore, our floodlight analysis serves to identify the range(s) of trust for which the moderating effect of perceived vulnerability becomes significant. The results of the floodlight analyses are illustrated in Fig. 3 for the Chinese sample and Fig. 4 for the German sample. Figure 3 shows that for the Chinese sample, the interaction between cross-border online shopping benefits and vulnerability transitions (orange colored area) between statistically nonsignificant and significant when trust = –1.17 (mean trust). Above this value, there is a significantly positive two-way interaction between cross-border online shopping benefits and vulnerability. Below this value, vulnerability does not moderate the effect of cross-border online shopping benefits on cross-border online purchase intentions.

Figure 4 shows that for the German sample, the interaction between cross-border online shopping benefits and vulnerability transitions (orange colored area) between statistically nonsignificant and significant when trust = –2.67 (mean trust) and trust = 0 (mean trust). Below the value of –2.67 and above the value of 0 (mean trust), there is a significantly positive two-way interaction between cross-border online shopping benefits and vulnerability. Comparing the two country samples, we find that the floodlight analyses suggest that for German online shoppers, a higher level of trust is necessary so that perceived vulnerability is compensated and increases the effect of perceived cross-border online shopping benefits on cross-border online purchasing intentions. For the Chinese sample, the three-way interaction effect becomes significant even at a below average level of trust, but the effect is less pronounced compared to the German sample.

5 Discussion

The results of our analyses in the context of cross-border online shopping provide empirical support for the appropriateness and cross-national applicability of the MTV framework. In particular, our findings show that while cross-border online shopping benefits builds the main motivational effect and trust towards foreign online vendors also has a positive effect, perceived vulnerability decreases cross-border online purchasing intentions. These direct effects are largely consistent across the two country samples from China and Germany and in line with previous findings on the inhibiting effects of vulnerability (e.g., Tsui-Auch and Möllering 2010). Regarding the proposed moderation effect, the results are less consistent and challenge previous understanding of the role of perceived vulnerability. We find support for

a significant moderating effect of vulnerability only for the Chinese example, while there is a small but nonsignificant positive effect in the German sample. The different results between the German and Chinese samples might be explained by the different expressions of their cultural identity. For example, Hofstede (2009) assumes that consumers from different countries have different attitudinal expressions which can lead to different behaviors. In particular, the cultural dimensions of uncertainty avoidance can shape cross-border online shopping behavior with regard to consumer vulnerability, which according to Hofstede (2019) varies greatly between Germany and China, as well as the cultural dimensions of individualism and power distance, which might also affect the general consumer vulnerability in a country.

However, the moderated moderation effect, i.e., the three-way interaction of trust towards foreign online vendors and perceived vulnerability, significantly increases the motivation to make cross-border online purchases for both country samples. In light of the findings of our floodlight analysis, it seems that vulnerability entails a reinforcing effect of cross-border online shopping behavior when a certain level of trust is present. Therefore, in line with Tsui-Auch and Möllering (2010), we find that negative effects of vulnerability can be absorbed by building trust. However, while Tsui-Auch and Möllering (2010), propose only a direct relationship between trust and perceived vulnerability, we theorize and empirically validate an interaction effect. In this regard, our findings suggest that the vulnerability construct may challenge the established relationships between key variables of consumer behavior and that the inclusion of perceived vulnerability as a moderator variable can result in unexpected changes in well-researched relationships. By shedding light on these relationships, the MTV framework provides more fine-grained theoretical clarity regarding the effect that motivates cross-border online shopping, and it offers implications for retail managers and policy makers who have to deal with uncertain situations that increase vulnerability of consumers.

5.1 Theoretical Implications

Our study contributes to international business and marketing theory by extending and respecifying the MA framework (Merton 1957) to advance our understanding of the effect through which vulnerability influences cross-border online shopping behavior. To understand this effect, we go beyond the simplistic argument "it depends" and consider the underlying interactions of the relationship between cross-border online shopping benefits and intention to understand the conditions under which this relationship applies (Andersson et al. 2014). Following Shultz and Holbrook's (2009) conceptualization of vulnerability, we assume that the factor of ability is reciprocal with the concept of vulnerability in cross-border online shopping, meaning that a lower level of ability corresponds to a higher level of vulnerability. Therefore, this research also offers implications for the conceptualization of vulnerability. Here, we theorize and demonstrate the higher-order reflective structure of perceived vulnerability as a combination of perceived lack of knowledge and perceived lack of skills.

Our findings make an important contribution to online shopping research by identifying that vulnerability affects cross-border online shopping in two different

ways: via a direct negative effect and via an indirect positive moderating effect. With the MTV framework, we therefore extend research on domestic online shopping that focuses solely on benefits and risks (e.g., Forsythe et al. 2006), but not on the lack of knowledge and lack of skills which create perceived vulnerability and affect cross-border online purchases. The introduction of a new conceptualization of perceived vulnerability into the international marketing literature and its integration in a holistic MTV framework offer a certain potential for helping to explain effectiveness in intercultural interactions.

In our two initial analyses, the MTV framework demonstrates its cross-cultural applicability and the potential to explain the effect of cross-border online shopping. Therefore, the MTV framework appears robust across countries with different cultural and economic backgrounds. Naturally, the usefulness of this new framework must establish its validity in a series of further studies. Because relationships depend on particular environmental conditions, the MTV framework might be appropriate to understand further motivation effects in situations that involve uncertain outcomes and high levels of vulnerability. Therefore, the MTV framework might also be applicable to further studies in international business where situations with increased uncertainty occur, for example, how the vulnerability (e.g., lacking language skills or limited knowledge about Chinese culture) of international managers operating in transition economies such as China and their trust towards the multinational corporation (MNC) affect their work motivations (Tsui-Auch and Möllering 2010).

The creation and empirical validation of the MTV framework is a step that is consistent with the development of a mid-range theory that links vulnerability perceptions to consumer behavior and international activities. Previous research on the topic of perceived vulnerability in international business studies is scarce and considers vulnerability mostly as an antecedent to managerial practices (Tsui-Auch and Möllering 2010). Derived from the MA framework, the combination of motivation and ability is primarily applied in the context of the main effect and as static factors influencing desired outcomes (e.g., Grewal et al. 2001; Bahadir et al. 2015). Although scholars agree that behavior across various contexts is a function of ability (or vulnerability) and motivation, there is no general agreement on the effect through which these factors operate (Siemsen et al. 2008). Indeed, it is possible that these factors combine in different ways across differing contexts. In line with Minbaeva et al. (2003), we show that effects not only result from the impact of individual variables, but also from the interaction of these variables. Moreover, mixed research results suggest that high levels of ability and motivation are not always valid precursors of behaviors (Moorman and Matulich 1993). For example, research finds that consumers who are moderately motivated and moderately able to perform some activities, perform most effectively (Bettman and Park 1980). These mixed findings indicate that with regard to the interaction of motivation and ability, a relationship of "the more, the better" might not exist in all cases. Our conceptualization of vulnerability as lack of ability might contribute to explaining these contradictory findings to some extent and help in examining the boundaries of the MA theoretical framework (Andersson et al. 2014).

5.2 Managerial Implications

A major implication of our findings for international business practice is that vulnerability may serve as an internationalization barrier to the cross-border activities of consumers that may counteract the cross-border e-commerce efforts of companies to sell to international shoppers online. In particular, our findings suggest that managers must cope with vulnerability and take measures to decrease vulnerability. Marketing strategies should aim to neutralize feelings of vulnerability and to take advantage of consumer trust (Bart et al. 2005). The negative impact of vulnerability on cross-border online purchasing intentions indicates a chance for online vendors to increase consumers' willingness to make cross-border online purchases by increasing knowledge and skills. Online vendors can increase knowledge by providing relevant information, for example, about the expected costs, delivery time, and return policy. Regarding skills, cross-border e-commerce should be manageable by customers with the same set of skills that are necessary for domestic online shopping to reduce the uncertainties and barriers of cross-border online shopping. For example, online vendors should provide the same language, currency, and payment services as in the domestic market of the online shopper. Doing so is important because only customers who are satisfied with their cross-border online shopping experiences will continue to buy from foreign online vendors and thus represent loyal and long-term profitable customers.

Whenever, consumers are potentially vulnerable, the question arises, if marketing activities that target the vulnerable consumer group are unethical (Jones and Middleton 2007). Firms are urged to avoid intended or unintended unethical marketing strategies for cross-border e-commerce, for example by concealing the actual place of location or displaying nontransparent delivery or return shipment costs. Moreover, retail managers are encouraged to develop a normative prescriptive framework for ethical conduct on the part of the cross-border e-commerce business that considers vulnerability of foreign online shoppers. This measures would also help to increase trust in foreign online vendors, which as our findings suggest, is necessary to strengthen the positive relationship between cross-border online shopping benefits and the intentions to conduct cross-border online purchases (Bart et al. 2005). That trust is important for online transactions is well-known, but its interaction with perceived vulnerability underlines the relevance of this construct for online relationship building even more.

Additionally, cross-border online shopping vulnerability arises because there are almost no existing international rules or norms in place to protect cross-border online shoppers. Most existing trade agreements between countries were signed in the predigital era to cover traditional flows of goods. Because cross-border e-commerce is related to direct shipments from foreign online vendors to customers in countries abroad, there is a lack of control and influence. This situation makes it even more important for governmental institutions and policy makers to help consumers develop the necessary knowledge and skills with regard to cross-border online shopping. Such knowledge and skills can be maintained by providing relevant information and educating consumers or by developing and offering tools that support online-shoppers, such as cross-border tax and tariffs calculators. Moreover, policy makers

can take measures to help online shoppers to access the trustworthiness of foreign online vendors, to avoid a general frivolously trusting that can result in vulnerability.

6 Limitations and Directions for Future Research

Our research has some limitations, which can serve as starting points for future research. Because our study is based on just two country samples, future research must assess the generalizability of the MTV framework by applying it to further country markets. Replications of our study that use different country combinations and that capture additional motivational determinants or further moderators are necessary to establish the generalizability and robustness of our findings. For example, consumer characteristics such as consumer ethnocentrism or cosmopolitanism may also influence or moderate cross-border online purchasing intentions (Riefler et al. 2012).

Furthermore, in this cross-national context, cultural influences could also be considered more strongly, such as Hofstede's cultural dimensions (2009), which already indicate that consumers from different cultures have different behavioral expressions, which in turn also shape their consumption behavior. Also, about half of the participants have already participated in cross-border e-commerce. Therefore, an endogeneity problem could arise here, since it cannot be controlled whether a successful cross-border e-commerce purchase in the past has influenced the perceived benefits of these participants. At least this effect can be excluded for the other half of the participants who have never participated in cross-border e-commerce.

Additionally, our measurement of the constructs that reflect motivation, trust and vulnerability relies on self-reporting by participants and is thus subject to the criticisms leveled at all self-report measures (see Donaldson and Grant-Vallone 2002). We have included both experienced and inexperienced participants in some of our analyses. With regard to future cross-border online shopping behavior, we were interested in the intention to generally shop at a foreign online retailer, which can be formed by both inexperienced and experienced participants, regardless of whether they already have experience or not. However, at the beginning of the study, each participant had to read an explanatory note describing cross-border online shopping and how it differs from national online shopping to ensure the same basic knowledge of all participants. Further research might use other measures and techniques to operationalize the MTV dimensions. For example, research might examine transaction data that include information on the residence of shoppers, thus helping to obtain a more concrete picture of cross-border online transactions and objective vulnerability that arises in cross-border e-commerce transactions between two specific country markets with or without trade and legal agreements. In this context, actual and perceived vulnerability of cross-border online shopping, might differ between country markets that share uniform market regulations within economic unions, such as the European Union and country markets with no common regulations (European Commission 2015). Moreover, we focus specifically on trust towards foreign online vendors because in online transactions, the online vendor is the key actor with regard to the exchange of money for goods. However, we cover only general trust and do not

focus on the brands, specific vendors or the countries of origin of online vendors. In addition, future research should consider further dimensions of trust, such as trust in technologies, institutions or service providers for payment and delivery, that are also related to cross-border online shopping. Moreover, in future research studies, cross-border online shopping benefits, vulnerability, and trust could be manipulated in an experimental setting, which, on the one hand, provides additional insights into the interaction of these determinants, and, on the other hand, could reduce endogeneity concerns of the study.

Funding Open Access funding enabled and organized by Schmalenbach-Gesellschaft and German Academic Association for Business Research.

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