International Journal of Sports and Physical Education (IJSPE)

Volume 9, Issue 1, 2023, PP 23-35 ISSN 2454-6380 http://dx.doi.org/10.20431/2454-6380.0901004 www.arcjournals.org



College Students Purchasing Knock-off Sports Shoes: Electronic Word of Mouth and Peer Influence

Ching-Hui Lin*1, Ying-Wan Chuang2, Hsin-Yi, Wang3

^{1,2}Office of Physical Education, Yuan Ze University, Taiwan ³Center of physical Education Tzu Chi University, Taiwan

Corresponding Author: Ching-Hui Lin, Office of Physical Education, Yuan Ze University, Taiwan

Abstract: In recent years, research on the consumer behavior of counterfeit goods has been taken seriously by scholars, but there is a comparative lack of studies on college students purchasing knock-off sports shoes. Therefore, this study developed the model of purchasing behavior, including the variables of sender's expertise, perceived risk, peer communication, product investment, eWOM, product attitude, and purchase intention. In this study, 1,091 college students in Putian City, China were investigated by stratified sampling. The partial least squares analysis results showed the strength of eWOM could be affected by the sender's expertise and perceived risk. Product attitude could be influenced by peer communication and product involvement. Product attitude could be impacted by eWOM, and both factors could affect the purchase intention for knock-off sports shoes. The findings of this study could provide a reference for practical action to boycott such shoes.

Keywords: counterfeit goods; electronic word of mouth (eWOM); consumer behavior; socialization

1. Introduction

While consumer demand for counterfeit luxury brands is often seen as "immoral", it is still strong and growing [1]. Counterfeiting in China is quite common and involves a variety of products, such as clothes, shoes, bags, toys, and food [2-3]. However, with the change in the social economy, some Chinese people have begun to believe that counterfeiting is a kind of fraud, which has a negative impact on R&D, intellectual property, social integrity, industrial development, and the taxation system [3]. As the economy grows, under the influence of materialism, utilitarian value, innovation-seeking, and hedonism, younger groups compete to buy brand-name products and show them off. If they cannot afford such expensive products, they might purchase brand-name knockoffs to satisfy their material desires [2, 4]. As a consequence, counterfeit goods are flooding the market.

Counterfeiting is referred to as infringing legally registered trademarks and illegally producing precise replicas of genuine brands [5]. *Shanzhai* (counterfeit) imitation is a type of replica that imitates an original brand through superficial or functional similarity to provide local market demand [6]. Research has found some students can afford to consume high-priced sports shoes of internationally renowned brands, but after making inquiries, it turned out that what they bought are counterfeit products. Interestingly, it has also been found that students who do not purchase them know about the existence of counterfeit products, and even know how to buy them. Therefore, this study interviewed students who had bought or sold knock-off sports shoes. According to these students, cheap prices and passable quality were the main reasons for making purchases. The purchase channels and product information sources were mostly from online sale platforms and WeChat Moments. Product introductions also came from classmates or friends who had bought knock-off sports shoes. These students tended to search online social media for electronic word of mouth (eWOM) related to counterfeit sports shoes before making a purchase.

Due to the convenience of the internet, the high facilitation, and low search cost, online shopping is attracting consumers and changing their ways of shopping [7-8], which also benefits unscrupulous merchants selling counterfeit goods online [9]. However, online shopping does not allow shoppers to investigate products directly, which creates the risk of uncertain quality [7,10]. But, eWOM does not have an effect on consumers' purchase decisions. Chan and Ngai [11] pointed out that the process of eWOM construction can be affected by the senders' experience, involvement context, and

professionalism. In addition, according to consumer socialization theory (CST), peers are an important factor influencing young people [12] and sports consumption [13]. Especially in college, product communication and product involvement among peers [14] can affect the intention to buy knock-off sports shoes. Based on the above analysis, college students' purchase of counterfeit sports shoes is impacted by online word-of-mouth and peer influence, but these results are still to be confirmed by empirical research. Thus, in order to develop an effective countermeasure, how consumers learn about counterfeit goods and how they buy them must be figured out. As a result, this study had the following two questions:

- ➤ Do word-of-mouth senders' professional reviews reduce purchase risk and significantly affect eWOM strength and college students' purchase intention for knock-off sports shoes?
- ➤ Does peer influence affect college students' involvement and attitude toward sports shoes, and further affect consumers' purchase intention for knock-off sports shoes?

2. Literature Review and Hypotheses Development

2.1 Influence of professional reviews from word-of-mouth senders on perceived risk, eWOM, and purchase intention

As the purchase intention of modern young people is influenced by new communication technologies, they are accustomed to searching for products' eWOM through the internet, social networking sites (SNS), and mobile devices before making a purchase [15]. Bansal and Voyer [16] stated that the wordof-mouth senders' professionalism refers to their expertise in products and services. The higher their professional levels are, the stronger the influence of the disseminated WOM on the purchase decision of the information receivers. Many studies in the past have confirmed influential eWOM senders are an important factor in the success of word-of-mouth marketing [17-19], primarily due to the information they provide when it is perceived as credible [20-21], persuasive [22-23], influential on the attitudes of others [24-25], and influential on purchasing decisions [26-27]. Asada and Ko [28] probed into the influence of sports consumers' word-of-mouth on sports audiences, and found the characteristics of information disseminators (i.e., expertise and credibility) and information (i.e., the richness of the message content and the intensity of the message delivery) are the determinants of the cognitive influence of word-of-mouth. Electronic word-of-mouth has emerged as a result of the continuous growth of online social media, which provides consumers with new approaches to obtaining access to content and sharing information about products or experiences as well as opinions on products [19]. Some consumers who prefer to use online social media share information and consumption experience of various products [29]. Therefore, with the popularity of the internet, it is becoming increasingly important for consumers to see eWOM as a reference while making purchase decisions [17, 30]. Since electronic word-of-mouth (eWOM) refers to interpersonal communication online or through social media as well as positive or negative statements about a product or company [31], eWOM is not only seen as a crucial factor in participating in online communities but also as influential on consumers' purchase intention [32]. Past research has found online reviews are regarded as a critical source of information that enables online shoppers to evaluate the quality of products and services. An important function of reviews is to reduce the risks and uncertainties that online buyers perceive to be associated with the purchase of products [11, 33]. Regarding eWOM, Lis [34] found the higher the level of the reviewers' expertise, the more their recommendations will be adopted, which will have a greater impact on other consumers' purchasing decisions. In addition, it was also demonstrated that the professionalism of the information sources received by consumers in social media can affect the credibility and usefulness of eWOM. When the credibility and usefulness of eWOM are high, they can impact on consumers' purchase intention [35]. According to the research results of the above scholars, this study proposed the following hypotheses:

- H1: Professional reviews from word-of-mouth senders can affect college students' perceived risk of purchasing knock-off sports shoes.
- H2: Professional reviews from word-of-mouth senders can affect the eWOM strength of knock-off sports shoes.
- H3: Professional reviews from word-of-mouth senders can affect college students' purchase intention of knock-off sports shoes.
- H4: College students' perceived risk of purchasing knock-off sports shoes has an impact on eWOM.

H5: College students' perceived risk of purchasing knock-off sports shoes has an impact on purchase intention.

2.2 Influence of peer communication on product involvement and attitude

Socialization is a complex learning development process that involves the teaching of knowledge, values, and norms for later participation in social life [36]. Families, peers, schools, communities, and mass communication are the agents of socialization [36-37], and among them, parents, siblings, classmates, friends, and teachers are the most crucial social agents, known in sociological terms as significant others or reference groups. According to CST, parents, peers, and mass media play an essential role in the socialization of consumers [38], and even function as the social environment in which children learn how to become consumers [39]. Among all consumer socialization agents, peers are considered to be the most influential [12, 40]. Moschis and Churchill [38] pointed out that the cognitive and behavioral patterns which influence the construction of consumer behavior are mainly based on two theories of human learning: the theory of cognitive development and social learning theory. They combined these two theoretical models and transformed them into the realm of consumer socialization, which states consumer learning is not only considered a cognitive psychological process of individual adaptation to the environment but also a socialization process. With the advancement and universality of social media, socializing consumers through peer communication on social media sites has become a critical marketing issue. In online communication on social media sites, the opinions of peers are seen as helpful in obtaining information and evaluating products [41]. People's attitudes towards products are formed through peer communication, which affects purchase intention as well [14]. Individual use of social networks is highest during the college stage, and eWOM on websites is often referred to while purchasing products [42]. Wang et al. [14] discovered that online peer communication, in the context of the socialization process, can affect consumers' online shopping, attitude towards products, and involvement in products, both directly and indirectly. Particularly, teenagers are the main contributors to online content, in that they use social media and instant messaging apps to communicate and share continuously with their peers. They prefer to immediately tell the outside world about their purchase and consumption experiences, thus leading to the creation and spread of eWOM, which influences peers and family members connected on social networks and enhances their trust and purchase intention [14, 43, and 44]. According to the above CST and the viewpoints of scholars, this study put forward the following hypotheses:

H6: Peer communication can positively affect college students' product involvement in sports shoes.

H7: Peer communication can positively affect college students' attitudes towards knock-off sports shoes.

2.3 Influence of product involvement on consumers' eWOM and product attitude

Wang et al. [14] found that through online peer communication, the socialization process can both directly and indirectly affect consumers' involvement in products. The degree of involvement influences the attitude towards the products and can affect the purchase intention. Zaichkowsky [45] defined involvement as the relevance degree to which an individual perceives something based on their own needs, values, and interests. In terms of consumer behavior, involvement is defined as the extent of consumer participation in products, advertising, and purchase-related consumption processes [46]. Involvement also has an effect on attitude formation [47], reaction to media advertisements, and purchase decisions [48]. The increasing importance of eWOM has revealed its impact on the evaluation of companies and products in online communities. Therefore, the degree of product involvement of consumers or reviewers is of significance as well. Arenas-Màrquez, Martínez-Torres, and Toral [49] pointed out that the degree of reviewers' product involvement in online communities and their social capability are closely related to other users' trust, because the higher the degree of consumers' involvement, the more expected cognitive responses there are. Furthermore, higher levels of social media engagement may strengthen the relationship between consumer attitudes toward product information and purchase intention [50], especially the intention to browse eWOM. Consumers' interest in forwarding a brand's tweets possibly depends on their level of involvement in the brand, product category, or message. One study found product involvement (in the form of fashion involvement) and brand involvement are key motivators for consumers to browse eWOM [51]. Krishnamurthy and Kumar [52] pointed out that both high- and low-involvement consumers browse eWOM information and spend more time with eWOM communication to form expectations or views about the brands. Meanwhile,

high-involvement consumers are also allowed to form a better brand image. Lim and Zhang [53], taking cognitive evaluation theory as a framework, assumed women with higher cognition and involvement are more likely to engage in information search and eWOM behaviors based on positive emotions. They found the degree of involvement can positively affect information search and eWOM behaviors. According to the research results of the above scholars, this study proposed the following hypotheses:

H8: Product involvement can positively affect college students' eWOM for knock-off sports shoes.

H9: Product involvement can positively affect college students' attitudes towards knock-off sports shoes.

2.4 Influence of eWOM on consumers' product attitude and purchase intention

According to previous research, eWOM, such as online sharing and reviews, has become a reliable source of information about products or services and has had a significant impact on consumers' purchase behaviors and the successes of new products [54-55]. For example, Cheng and Ho [56] analyzed 983 customer comments on restaurant review sites. The results showed that the larger the number of followers, the higher the professionalism of the reviewer will be. In addition, the larger the number of images and words is, the more practical and useful the reviews will be to readers. Many previous studies have confirmed that with the emergence of social commerce, eWOM has become an important reference for users to make purchasing decisions [57]. Kim et al. [58] manifested the significance of effective social media information, which influences customer attitudes and further brings about higher eWOM intention. Hua et al. [59] studied social media as a tool for choosing travel destinations, and the result showed consumers' perception of social media usefulness and convenience, perceived risk, and eWOM directly affect attitude and indirectly influence intention through the change of attitude. In accordance with the theory of reasoned action (TRA) [60], the intention of a behavior is its major determinant and is influenced by attitude towards that behavior. Ajzen [61] pointed out attitude can be considered an individual's positive or negative psychological response to stimuli. Attitude involves a consumer's spontaneous psychological assessment, which is conducive for consumers to make online product purchases [62]. The research by Wang et al. [14] found consumers' attitudes toward products can affect purchase intention. Moreover, eWOM has a great impact on consumers' purchase decisions [30, 31, and 63] and consumers' attitudes [64]. According to the research results of the above scholars, this study proposed the following hypotheses:

- H10: The strength of eWOM can affect college students' attitudes towards knock-off sports shoes.
- H11: The strength of eWOM can affect college students' purchase intention for knock-off sports shoes.
- H12: Product attitude can positively affect college students' purchase intention for knock-off sports shoes.

3. Research Method

3.1 Sample design and data collection

This study took the students of China's Putian University, the only university in Putian City, as the research objects. Putian mainly produces sports shoes through contract manufacturing, and the students of this university come from a number of provinces and municipalities across the country. The stratified random sampling method was used in this study. At first, the college was considered as a unit, and a total of 13 colleges were selected. From each college, 100 students were randomly selected to conduct the survey. A total of 1,300 questionnaires were sent out, and 1,091 were returned, with an effective questionnaire rate of 83.92%.

3.2 Questionnaire design

The questionnaire of this study was divided into eight parts. The first part was the professionalism scale of the senders, which was used to understand the senders of eWOM. Professionalism for knock-off sports shoes included honest evaluations, trustworthiness, sufficient usage experience, degree of understanding, being an expert in knowledge of sports shoes, and expressing professional views. There were seven items in this scale, which was based on the sender's professional scale developed by Bansal and Voyer [16], and the wordings of the items were modified to fit the context of this study.

The second part was the perceived risk scale, which consisted of three items related to the function,

quality, and monetary risks that college students may feel while buying counterfeit sports shoes. This scale mainly referred to the risk perception scale of Ting, Goh, & Isa [65] which explores the intention to buy counterfeit luxury goods, and the wordings of the items were modified to fit the context of this study.

The third part was the peer communication scale, which consisted of three items. It was primarily used to understand whether college students will ask others for their opinions before considering buying knock-off sports shoes, and exchange opinions and discuss with others to obtain more information about knock-off sports sports shoes. This scale mainly referred to the peer communication scale developed by Wang et al. [14] during their research on the influence of peer communication from social media on purchase intention, and the wordings of the items were modified to fit the context of this study.

The fourth part was the product involvement scale, which had five items. Its purpose was mainly to understand the involvement context of college students in sports shoes, including importance, needs, interests, close relationship with life, and whether they pay attention to sports shoes. This scale mainly referred to the product involvement scale developed by Wang et al. [14], who borrowed ideas from Zaichkowsky's [45] consumer involvement scale, and the wordings of the items were modified to fit the context of this study.

The fifth part was the product attitude scale, which consisted of four items used to understand the attitudes of college students towards knock-off sports shoes, including preference, good impression, worthiness, and good quality based on assumption. This scale mainly referred to the product attitude scale developed by Wang et al. [14], and the wordings of the items were modified to fit the context of this study.

The sixth part was the eWOM scale, which was composed of five items used to understand the behavior of college students searching other netizens' eWOM related to counterfeit sports shoes on social platforms, including quality, experience, consumption logic and knowledge, impression, and important sources of product information. This scale mainly referred to the word-of-mouth scale developed by Bhattacharya, Srivastava and Verma [66], in addition to the researcher's compilation based on information found on social networks (social platforms, spaces, and discussion forums) after searching for netizens' word-of-mouth on knock-off sports shoes.

The seventh part was the purchase intention scale, which consisted of three questions used to understand college students' plans to buy knock-off sports shoes. This scale was mainly compiled with reference to the research on eWOM and consumer behavior developed by Zhao et al. [57]. The last part was the student's personal basic information, including gender, year of study, and department.

3.3 Data analysis

The statistical analysis steps conducted in this study were as follows. First, SPSS for Windows 21.0 was used to analyze the distribution and percentage of statistics, as well as the distribution of the demographic background variables of the students. Second, Warp net PLS 5.0 was used with the partial further squares (PLS) statistical method to analyze the senders' expertise, perceived risk, peer communication, product involvement, eWOM, product attitude, as well as test the reliability and validity of the purchase intention scale and test the hypotheses. The composite reliability value (CR) and Cronbach's α were used to determine the reliability and validity, and these values needed to be equal to or greater than .70 [67]. Validity was based on whether the factor loadings reached .50, and all the latent variables in the average variation extraction (AVE) needed to be equal to or greater than .50 to determine whether the latent variables had convergent validity [68]. In terms of the discriminant validity, the inspection method put forward the individual latent variables of extracting the square root of the average variance, which should be greater than the potential variables and other latent variables in the model of covariant relations [69]. In addition, Venkatesh, Thong, and Xu [70] suggested the test standard of the AVE square root should be at least greater than or equal to .70. The model structure relationship analysis depended on: (1) whether the standardized path coefficient reached statistical significance; and (2) the interpretation ability of the model in R^2 [67-68].

4. Results

4.1 Analysis of effective sample characteristics

Among the 1,091 valid questionnaires recovered in this study, 497 (45.6%) were male and 594 (54.4%) were female. With regard to the year of study, 79 students in their freshmen year accounted for 45.6%, 553 students in their sophomore year accounted for 50.7%, students in their junior year accounted for 40.8%, and 14 students in their senior year accounted for 1.3%. The small number of senior students was due to many of them being engaged in internships in off-campus companies and therefore being unable to fill out the questionnaires. Among the research subjects, 324 had bought counterfeit sports shoes, and 767 people had never bought them.

4.2 Reliability and validity analysis

4.2.1 Confirmatory factor analysis

From the results of the analysis shown in Table 1, the composite reliability (CR) of the seven potential variables in the scale were all above .80, and the numerical values of Cronbach's α were all higher than .70, indicating the scale had high reliability. In terms of validity, from the analysis results, the factor loadings of each observed variable were higher than .60, and the AVE of each potential variable was higher than .50, indicating good convergent validity.

Table1. Confirmatory factor analysis results

Table 1. Conjuntatory	jacior analysis results				
Latent variables	Observed variables	FL	CR	α	AVE
Sender's expertise	I believe word-of-mouth senders:	.76	.89	.86	.54
(SE)	1. Evaluate the counterfeit footwear industry honestly.	.76			
	2. Evaluate the counterfeit footwear industry reliably.	.78			
	3. Possess sufficient experience in the counterfeit	.77			
	footwear industry.	.71			
	4. Know about the counterfeit footwear industry to a	.71			
	certain extent.	.67			
	5. Are experts with related knowledge of sports shoes.				
	6. Mostly have a good impression of knock-off sports				
	shoes.				
	7. Provide professional opinions in the expressions in the				
	article.				
Perceived	8. Functional risks may be encountered after buying	.85	.87	.78	.69
Risk (PR)	knock-off sports shoes.	.82			
	9. Quality risks may be encountered after buying knock-	.83			
	off sports shoes.				
	10. Financial risks may be encountered after buying				
	knock-off sports shoes.				
Peer	11. When considering whether to buy knock-off sports	.88	.87	.78	.70
communication(PC)	shoes, I will have relevant discussions and exchanges	.81			
	with other people.	.81			
	12. When considering whether to buy knock-off sports				
	shoes, I will ask others for information on the counterfeit				
	footwear industry.				
	13. I can learn more about knock-off sports shoes by				
	discussing them with others.				
Product	14. I think sports shoes are important products.	.78	.90	.85	.63
involvement (PI)	15. I have a need to buy sports shoes.	.80			
	16. I am interested in sports shoes.	.84			
	17. I think sports shoes are closely related to my life.	.83			
	18. I often pay attention to information about sports	.72			
	shoes.				
Product	19. I prefer knock-off sports shoes.	.84	.90	.86	.70
Attitude (PA)	20. I have a good impression of knock-off sports shoes.	.86			
` ′	21. I think knock-off sports shoes are worth having.	.83			
	22. I think the quality of knock-off sports shoes is good.	.82			

Electronic word of	I think netizens' eWOM of knock-off sports shoes on the	.66	.86	.80	.56
mouth (eWOM)	internet (social platforms, spaces, and discussion forums):	.69			
	23. Creates strong negative feelings due to poor quality.	.83			
	24. Is convincing due to sufficient use experience.	.88			
	25. Provides consumers with simple consumption logic	.77			
	and knowledge.				
	26. Is deeply impressive and reliable.				
	27. Provides an important source of product information.				
Purchase intention	28. After an evaluation, I will make plans to buy knock-	.88	.92	.87	.79
(PURI)	off sports shoes.	.89			
	29. After an evaluation, I will want to buy knock-off	.89			
	sports shoes.				
	30. After an evaluation, I am sure I will buy knock-off				
	sports shoes in the future.				

4.2.2 Discriminant validity analysis

Table 2. Discriminant validity analysis

Variables	SE	PR	PC	PI	eWOM	PA	PURI
SE	.74						
PR	.47	.83					
PC	.50	.26	.84				
PI	.45	.26	.51	.80			
PA	.54	.52	.49	.44	.75		
eWOM	.59	.23	.55	.47	.49	.84	
PURI	.50	.24	.45	.39	.46	.67	.89

Note: Square roots of the average variances extracted (AVEs) are shown on the diagonal

From the results shown in Table 2, the square root of the AVE of each potential variable in the No-Purchase-Experience Scale was between .75 and .91 and greater than .70. Also, the AVE of each potential variable was greater than the relevant values in the same horizontal and longitudinal lines, which met the detection standard. It could therefore be seen that the measurement model of this study had good discriminant validity.

4.3 Hypothesis validation

In Figure 1, the path coefficients are standardized regression coefficients (β value). The sender's expertise had a positive effect on perceived risk (β = .48, p < .01), eWOM (β = .27, p < .01), and purchase intention (β = .12, p < .01). Perceived risk had a positive impact on eWOM (β = .23, p < .01) but had no direct effect on purchase intention (β = .04, p = .08). Peer communication had a positive effect on product involvement (β = .52, p < .01) and product attitude (β = .32, p < .01). Product involvement had a positive influence on eWOM (β = .21, p < .01) and product attitude (β = .18, p < .01). eWOM had a positive impact on product attitude (β = .29, p < .01) and purchase intention (β = .18, p < .01). Finally, product attitude had a positive effect on purchase intention (β = .52, p < .01).

The value of R² represents the predictive capability of the research model (that is, the percentage of variation explained by the outer variation term to the inner variation term), which stands for the predictive ability of the research model. The higher the value, the stronger the predictive ability. The sender's expertise had a predictive power of 23% for perceived risk and a predictive power of 42% for eWOM through perceived risk. Peer communication had a predictive power of 27% for product involvement and could explain product attitude up to 42% through product involvement and eWOM. The last six potential variables had a predictive power of 51% regarding the purchase intention for knock-off sports shoes.

Table 3. Hypothesis test results

Hypothesis	Path coefficients(β)	Test result
H1: Sender's expertise-> Perceived risk	.48**	Support
H2: Sender's expertise-> eWOM	.27**	Support
H3: Sender's expertise-> Purchase intention	.12**	Support
H4: Perceived risk -> eWOM	.23**	Support

H5: Perceived risk ->Purchase intention	.04	No Support
H6: Peer communication -> Product involvement	.52**	Support
H7: Peer communication -> Product attitude	.32**	Support
H8: Product involvement ->eWOM	.21**	Support
H9: Product involvement -> Product attitude	.18*	Support
H10: eWOM-> Product attitude	.29**	Support
H11: eWOM ->Purchase intention	.18**	Support
H12: Product attitude -> Purchase intention	.52**	Support
Model fit indicators : APC = .302 (p<.001), ARS = .355 (p<.001)	001), AVIF = 1.599 (acce	eptable if <= 5, ideally
<= 3.3)		

^{**}P < .01

Model fit indicators are important in SEM, as they offer comparable measurements [71. WarpPLS was used to calculate three fit indices that are meaningful in the context of variance-based SEM [72]: the average path coefficient (APC), the average R-squared (ARS), and the average variance inflation factor (AVIF). WarpPLS includes APC and ARS to enable an acceptable comparison between different models, which is why these measures are of lower importance in studies like this, where each path is independently important [71]. However, figures for APC and ARS should both be under 2 and should both be statistically significant (p < .05), while the value for AVIF is suggested to be below 5. In this study, the whole model demonstrated an acceptable fit to the data for APC = .308 (p < .001), ARS = .365 (p < .001) and AVIF = 1.868. Table 3 reports the results of the hypothesis tests.

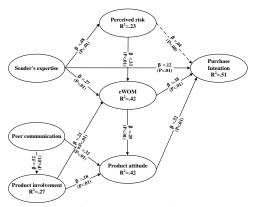


Figure 1. Structural model results

5. Discussion and Conclusions

5.1 Results and theoretical implications

According to the empirical results, it was found that 11 of the 12 hypotheses proposed in this study were supported. In terms of the interaction of all variables of the model, for people who had professional knowledge or experience with counterfeit sports shoes, their professional comments on online social platforms supported the relevant viewpoints. Furthermore, some consumers like to use online social media to share information and the consumption experience of various products [29]. In this study, when these professional comments were more positive, the eWOM of counterfeit sports shoes would also be more affirmative, and the intention of college students to purchase counterfeit sports shoes would be intensified. The above findings of this study supported previous scholars' claims that the expertise of reviewers can influence eWOM [34] and consumer purchase intentions [32, 35]. Online purchases of knock-off sports shoes also have risks. This study also found that the professional comments from word-of-mouth senders could help college students recognize the risk of buying knockoff sports shoes but could not directly affect their intentions to purchase counterfeit sports shoes. The above results support an important function of reviews being able to reduce the risks and uncertainties that online buyers perceive to be associated with product purchases [11, 33]. When the perceived risks of college students are clearer, their dependence and reference to eWOM will be higher, which will directly affect their purchase intention.

The second part of the model was the impact of consumer socialization. From the perspective of CST, this study proposed that peer communication can positively influence consumers' involvement and

product attitudes. After empirical research, two hypotheses were confirmed. When college students want to buy knock-off sports shoes, they will ask other people or discuss and exchange information about counterfeit shoes. It has been previously pointed out that while communicating on SNS, peer opinions are seen as helpful in obtaining information and evaluating products [40]. Attitudes toward products are formed through peer communication, which also affects purchase intention [14]. Among all consumer socialization agents, peers are considered to be the most influential [12], because the improvement of communication with peers makes college students increase their involvement in sports shoes. In this study, they believed sports shoes were important products, they had a need for and an interest in them, and sports shoes were closely connected to their lives. Therefore, they would often pay attention to information on sports shoes. Similarly, because of the positive impact of peer communication, the attitude of college students towards knock-off sports shoes was more positive with the increasing involvement in sports shoes. Wang et al. [14] found that online peer communication, in the context of the socialization process, can affect consumers' online shopping, attitude towards products, and product involvement, both directly and indirectly. In this study, it was also found that the higher the involvement of college students in sports shoes is, the higher their reference to eWOM will be; that is, when they want to make a purchase, they hope to have a deeper understanding of counterfeit sports shoes. The results of this study supported previous findings, which found that in the college stage, students usually refer to eWOM on websites when purchasing products [41]. The results of this study also supported related research, which found that when consumers are involved in products, the information search behavior and eWOM will be positively influenced [42, 51-53].

This study also revealed that the higher the eWOM of counterfeit sports shoes is, the more positive the attitude of college students towards them will be. Attitude can also affect purchase intention, which could explain the positive attitude of college students towards knock-off sports shoes—not only due to the influence from peer communication and product involvement in sports shoes but also due to the influence of eWOM. This result also supported the previous point that eWOM is important for consumer attitudes [54] and consumer behaviors in purchasing products [31, 54-55, 57, 63]. Before buying counterfeit sports shoes, college students will refer to the reviewers' eWOM on online social platforms because of the influence of product involvement. Finally, this study found that product attitude can positively affect customers' purchase intentions. The results of this study supported TRA [60], which manifests the intention of a behavior is its major determinant and is affected by the attitude towards that behavior. It was also confirmed that consumers' attitudes towards products contribute to consumers purchasing products online [62] and impact their purchase intentions [14, 59].

Based on the above discussion, this study reached a number of conclusions. First, more positively professional reviews of word-of-mouth senders on knock-off sports shoes could lower the risk of college students buying knock-off sports shoes. These positive reviews could prominently affect the eWOM strength and have a positive influence on the college students' purchase intentions for knock-off sports shoes. Second, the higher communication context in sports shoes among college students and their peers could positively influence the degree of involvement of college students in sports shoes and the attitude towards knock-off sports shoes. Third, the strength of eWOM could positively affect the attitude of college students towards knock-off sports shoes. In addition, eWOM and product attitude had a positive impact on college students' purchase intentions for knock-off sports shoes. Because few researchers have analyzed the factors influencing consumers to buy knock-off sports shoes, and how eWOM affects consumer behaviors. The main contribution of this study was to provide a structural model for the consumption of knock-off sports shoes.

5.2 Practical implications

In terms of practical application, previous research related to eWOM was all related to marketing and management, and their recommendations differed from the recommendations of this research. This study suggested to start from the reasons for the formation of eWOM, how to influence consumers' intentions to buy counterfeit sports shoes and then to curb such purchasing behaviors should be understood. Priporas et al. [3] conducted research on the purchase of counterfeit goods by the Chinese middle class, and advised that to prevent the prevalence of counterfeit goods in the consumer market, fines must be increased, nationwide education must be strengthened, and systems of law enforcement must be improved. In addition, their research also pointed out that educating consumers seems to be the best way, especially in school education, which should put more emphasis on inculcating students with the importance of respect for intellectual property rights, the harm of consuming counterfeit goods to

market development, and issues related the damage of personal morals (Quach & Thaichon, 2017). From the results of this study, it was also found that the reasons for the formation of online word-of-mouth had a positive impact on the purchase intention of college students. However, this study did not support the idea that the formation of online word of mouth helps in providing information for consumers to buy knock-off sports shoes. Therefore, in order to prevent the sale of non-genuine products, in addition to bans of the source manufacturers, it is of great significance to cut off comments on the internet and ban sellers on the platforms.

5.3 Limitations and future research

This study contributed to both theory and practice; however, there were some limitations that should be addressed in future studies. First of all, this study surveyed college students who had purchased knock-off sports shoes, and consumers from other social classes were not included. As it is difficult to conduct questionnaire surveys on consumers who have purchased counterfeit sports shoes, it is suggested that future researchers consider distributing questionnaires through online platforms to invite people who have purchased knock-off sports shoes to understand their purchasing motives and study their consumption behavior. In this study, based on the researchers' informal surveys (interviews) over the years, it was found that the subjects had a simple understanding of knock-off sports shoes. Therefore, it is recommended to future researchers that the professional cognition of counterfeit sports shoes be added into the studies while investigating consumer behaviors toward knock-off sports shoes.

REFERENCES

- [1] Bian, X.; Wang, K.Y.; Smith, A.; Yannopoulou, N. New Insights into Unethical Counterfeit Consumption. J. Bus. Res. 2016, 69, 4249-4258, doi:10.1016/j.jbusres.2016.02.038
- [2] Islam, T.; Pitafi, A.H.; Akhtar, N.; Liang, Xiaobei. Determinants of Purchase Luxury Counterfeit Products in Social Commerce: The Mediating Role of Compulsive Internet Use. J. Retail. Consum. Serv. 2021, 62, 102596, doi:10.1016/j.jretconser.2021.102596
- [3] Priporas, C.V.; Chen, Y.; Zhao, S.; Tan, H. An Exploratory Study of the Upper Middle-class Consumer Attitudes towards Counterfeiting in China. J. Retail. Consum. Serv. 2020, 53, 101959, doi:10.1016/j.jretconser.2019.101959
- [4] Chand, V.S.; Fei, C. Self-brand Connection and Intention to Purchase a Counterfeit Luxury Brand in Emerging Economies. J. Consum. Behav. 2021, 20, 399–411, doi:10.1002/cb.1871
- [5] Lai, K.Y.; Zaichkowsky, J.L. Brand Imitation: Do the Chinese have Different Views? Asia. Pacific. J. Manag. 1999, 16(2), 179–192. doi:10.1023/A:1015482707900
- [6] Qin, Y.; Shi, L.H.; Song, L.; Stöttinger, B.; Tan, K.F. Integrating Consumers' Motives with Suppliers' Solutions to Combat Shanzhai: A Phenomenon Beyond Counterfeit. Bus. Horiz. 2018, 61(2), 229-237, doi:10.1016/j.bushor.2017.11.009
- [7] Archak, N.; Ghose, A.; Ipeirotis, P.G. Deriving the Pricing Power of Product Features by Mining Consumer Reviews. Manage. Sci. 2011, 57 (8), 1485-1509, doi:10.1287/mnsc.1110.1370
- [8] Pan, Y.; Zhang, J.Q. Born Unequal: A Study of the Helpfulness of User-generated Product Reviews. J. Retail. 2011, 87(4), 598-612, doi:10.1016/j.jretai. 2011.05.002
- [9] Chin, S.H.; Lu, C.; Ho, P.T.; Shiao, Y.F.; Wu, T.J. Commodity Anti-Counterfeiting Decision in E-Commerce Trade Based on Machine Learning and Internet of Things. Comput. Stand. Interfaces. 2021, 76, 103504, doi:10.1016/j.csi.2020.103504
- [10] Moe, W.W.; Trusov, M. The Value of Social Dynamics in Online Product Rating Forums. J. Mark. Res. 2011, 48(3), 444-456, doi: 10.1509/jmkr. 48.3.444
- [11] Chan, Y.Y.Y.; Ngai, E.W.T. Conceptualising Electronic Word of Mouth Activity: An Input-Process-Output Perspective. Mark. Intell. Plan. 2011, 29(5), 488–516, doi:10.1108/02634501111153692
- [12] Chang, H.H., Wong, K.H.; Shen, Y.A. Effects of the Consumer Socialization Process on Content Sharing on SNSs: Social Comparison and Anticipated Emotions as Moderators. Technol. Forecast. Soc. Change, 2022, 174, 121262, doi:10.1016/j.techfore.2021.121262
- [13] Yim, B.H.; Byon, K.K.; Baker, T.A.; Zhang, J. J. Identifying Critical Factors in Sport Consumption Decision Making of Millennial Sport Fans: Mixedmethods Approach. Eur. Sport. Manag. Q. 2021, 21 (4), 484-503, doi:10.1080/16184742.2020.1755713
- [14] Wang, X.; Yu, C.; Wei, Y. Social Media Peer Communication and Impacts on Purchase Intentions: A Consumer Socialization Framework. J. Interac. Mark. 2012, 26, 198–208, doi:10.1016/j.intmar.2011.11.004
- [15] Muralidharan, S.; Rejón-Guardia, F.; Xue. F. Understanding the Green Buying Behavior of Younger Millennials from India and the United States: A Structural Equation Modeling Approach. J. Int. Consum.

- Mark. 2016, 28, 54–72, doi: 10.1080/13527266.2017.1303623
- [16] Bansal, H.S.; Voyer, P.A. World-of-Mouth Processes within a Services Purchase Decision Context. J. Serv. Res. 2000, 3(2), 166-177, doi:10.1177/109467050032005
- [17] Cheung, C.M.K.; Thadani, D.R. The Impact of Electronic Word-of-Mouth Communication: A Literature Analysis and Integrative Model. Decis. Support Syst. 2012, 54(1), 461–470, doi:10.1016/j.dss.2012.06.008.
- [18] Chu, S.; Kim, Y. Determinants of Consumer Engagement in Electronic Word-of-Mouth (eWOM) in Social Networking Sites. Int. J. Advert. 2011, 30(1), 47–75, doi:10.2501/IJA-30-1-047-075
- [19] Kim, Y.; Park, Y.; Lee, Y.; Park, K. Do We Always Adopt Facebook Friends' eWOM Postings? The Role of Social Identity and Threat. Int. J. Advert. 2018, 37(1), 86–104, doi:10.1080/02650487.2017.1386410
- [20] Kim, E.; Sung, Y.; Kang, H. Brand Followers' Retweeting Behavior on Twitter: How Brand Relationships Influence Brand Electronic Word-of-Mouth. Comput. Hum. Beha. 2014, 37 (8), 18-25, doi:10.1016/j.chb.2014.04.020
- [21] Watts, S. A.; Zhang, W. Capitalizing on Content: Information Adoption in Two Online Communities. J. Assoc. Inf. Syst. 2008, 9(2), 73-94, doi: 10.17705/1jais.00149
- [22] Cheung, C.M.K.; Lee, M.K.O.; Rabjohn, N. The Impact of Electronic Word-of-Mouth: The Adoption of Online Opinions in Online Customer Communities. Internet Res. 2008, 18(3), 229-247, doi:10.1108/10662240810883290
- [23] Chu, S.C.; Kamal, S. The Effect of Perceived Blogger Credibility and Argument Quality on Message Elaboration and Brand Attitudes: An Exploratory Study. J. Interact. Advert. 2008, 8(2), 26-37. doi:10.1080/15252019.2008.10722140
- [24] Doh, S.J.; Hwang, J.S. How Consumers Evaluate eWOM (electronic word-of-mouth) Messages. Cyberpsychol. Behav. 2009, 12(2), 193-197, doi:10.1089/cpb.2008.0109
- [25] Lee, J.; Park, D. H.; Han, I. The Effect of Negative Online Consumer Reviews on Product Attitude: An Information Processing View. Electron. Commer. Res. Appl. 2008, 7(3), 341-352, doi:10.1016/j.elerap.2007.05.004
- [26] Lee, M.; Youn, S. Electronic Word of Mouth (eWOM): How eWOM Platforms Influence Consumer Product Judgement. Int. J. Advert. 2009, 28(3), 473-499, doi.org/10.2501/S0265048709200709
- [27] Zhu, F.; Zhang, X.M. Impact of Online Consumer Reviews of Sales: The Moderating Role of Product and Consumer Characteristics. J. Mark. 2010, 74 (2), 133-148, doi:10.1509/jm.74.2.133
- [28] Asada, A.; Ko, Y.J. Determinants of Word-of-Mouth Influence in Sport Viewership. J. Sport Manag. 2016, 30, 192-206, doi:10.1123/jsm.2015-0332
- [29] Daugherty, T.; Hoffman, E. eWOM and the Importance of Capturing Consumer Attention within Social Media. J. Mark. Commun. 2014, 20(1–2), 82–102, doi:10.1080/13527266.2013.797764
- [30] Fu, X.; Bin, Z.; Xie, Q.; Liuli, X,L.; Yu, C. Impact of Quantity and Timeliness of eWOM Information on Consumer's Online Purchase Intention Under C2C Environment. Asian. J. Bus. Res. 2011, 1(2), 37-52, doi:10.14707/ajbr.110010
- [31] Yang, F.X. Effects of Restaurant Satisfaction and Knowledge Sharing Motivation on eWOM Intentions: The Moderating Role of Technology Acceptance Factors. J. Hosp. Tour Res. 2017, 41(1), 93– 127, doi:10.1177/1096348013515918
- [32] Erkan, I.; Evans, C. Social Media or Shopping Websites? The Influence of eWOM on Consumers' Online Purchase Intentions. J. Mark. Commun. 2018, 24(6), 617-632, doi:10.1080/13527266.2016.1184706
- [33] Yang, J.; Sarathy, R.; Lee, J. The Effect of Product Review Balance and Volume on Online Shoppers' Risk Perception and Purchase Intention. Decis. Support. Syst. 2016, 89, 66–76, doi:10.1016/j.dss.2016.06.009 0167-9236/
- [34] Lis, B. In eWOM we Trust: A Framework of Factors That Determine the eWOM Credibility. Bus. Inf. Syst. Eng. 2013, 5, 129-140, doi:10.1007/s12599-013-0261-9
- [35] Tien, D. H.; Amaya Rivas, A.A.; Liao, Y.K. Examining the Influence of Customer-to-Customer Electronic Word-of-Mouth on Purchase Intention in Social Networking Sites. Asia. Pacific. Manag. Rev. 2019. 24, 238-249, doi:10.1016/j.apmrv.2018.06.003
- [36] McPherson, B.D.; Curits, J.E.; Loy, J.W. The Social Significance of Sport; Human Kinetics, Champaign, IL, USA, 1989; ISBN 978-0873222358.
- [37] Eitzen, D.S.; Sage, G. H. Sociology of North American Sport. WMC Brown Publishers, Dubuque, IA, USA, 1989; ISBN 978-0190250430.
- [38] Moschis, G.P.; Churchill Jr, J.A. Consumer Socialization: A Theoretical and Empirical Analysis. J. Mark. Res. 1978, 15(4), 599-609, doi:10.1177/002224377801500409
- [39] Hota, M.; Bartsch, F. Consumer Socialization in Childhood and Adolescence: Impact of Psychological

- Development and Family Structure. J. Bus. Res. 2019, 105, 11-20. doi:10.1016/j.jbusres.2019.07.035
- [40] Ling, C.; Zhang, A.; Zhen, X. Peer Effects in Consumption among Chinese Rural Households. Emerg. Mark. Finance. Trade. 2018, 54, 2333–2347, doi:10.1080/1540496X.2017.1363034
- [41] Grange, C.; Benbasat, I. Opinion Seeking in a Social Network-Enabled Product Review Website: A Study of Word-of-Mouth in the Era of Digital Social Networks. Eur. J. Inf. Syst. 2018, 27(6), 629–53. doi:10.1080/0960085X.2018.1472196
- [42] Jorgensen, J. J.; Ha, Y. The Influence of Electronic Word of Mouth via Social Networking Sites on the Socialization of College-Aged Consumers. J. Interac. Advert. 2019, 19(1), 29–42, doi.:10.1080/15252019.2018.1533500
- [43] Mishra, A.; Maheswarappa, S. S.; Maity, M.; Samu, S. Adolescent's eWOM Intentions: An Investigation into the Roles of Peers, the Internet and Gender. J. Bus. Res. 2018, 86, 394-405, doi:10.1016/j.jbusres.2017.04.005
- [44] Wu, C.; Mai, F.; Li, X. The Effect of Content Depth and Deviation on Online Review Helpfulness: Evidence from Double-Hurdle Model. Inf. Manag. 2021, 58 (2), 103408, doi:10.1016/j.techfore.2021.121262
- [45] Zaichkowsky, J.L. Measuring the Involvement Construct. J. Consum. Res. 1985, 12, 341-352. doi:10.1086/208520
- [46] Broderick, A.J.; Mueller, R.D. A Theoretical and Empirical Exegesis of the Consumer Involvement Construct: The Psychology of the Food Shopper. J. Mark. Theory. Pract. 1999, 7(4), 97-108, doi.org/10.1080/10696679.1999.11501855
- [47] Foxall, G.; Goldsmith, R.; Brown, S. Consumer psychology for marketing, 2nd ed; International Thomson Business Press, Boston, MA, USA, 1998; ISBN 978-1861523716.
- [48] Josiam, B.; Kinley, T.; Kim, Y. Involvement and the Tourist Shopper: Using the Involvement Construct to Segment the American Tourist Shopper at the Mall. J. Vacat. Mark. 2005, 11(2), 135-154. doi:10.1177/1356766705052571
- [49] Arenas-M'arquez, F.J.; Martínez-Torres, M.R.; Toral, S. L. How can Trustworthy Influencers Be Identified in Electronic Word-of-Mouth Communities? Technol. Forecast. Soc. Change. 2021, 166, 120596. doi:10.1016/j.techfore.2021.120596
- [50] Putrevu, S.; Lord, K.R. Processing Internet Communications: A Motivation, Opportunity and Ability Framework. J. Curr. Issues Res. Advert. 2003, 25(1), 45-59. doi:10.1080/10641734.2003.10505140
- [51] Wolny, J.; Mueller, C. Analysis of Fashion Consumers' Motives to Engage in Electronic Word-of-Mouth Communication through Social Media Platforms. J. Mark. Manag. 2013, 29(5–6), 562–583. doi:10.1080/0267257X.2013.778324
- [52] Krishnamurthy, A.; Kumar, S. R. Electronic Word-of-Mouth and the Brand Image: Exploring the Moderating Role of Involvement through a Consumer Expectations Lens. J. Retail. Consum. Serv. 2018, 43, 149-156, doi:10.1016/j.jretconser.2018.03.010
- [53] Lim, J.S; Zhang, J. The Impact of Message Appraisals of Dove's Campaign for Real Beauty on Information Seeking and Electronic Word-of-Mouth Intentions of US Female Consumers. Telemat Inform. 2021, 61, 101594, doi:10.1016/j.tele.2021.101594
- [54] Filieri, R.; McLeay, F.; Tsui, B.; Lin. Z. Consumer Perceptions of Information Helpfulness and Determinants of Purchase Intention in Online Consumer Reviews of Services. Inf. Manag. 2018, 55(8), 956–970. Doi: 10.1016/j. im.2018.04.010.
- [55] Li, X.; Wu, C.; Mai, F. The Effect of Online Reviews on Product Sales: A Joint Sentiment-Topic Analysis. Inf. Manag. 2019, 56(2). 172–184. doi: 10.1016/j.im.2018.04.007.
- [56] Cheng, Y.H.; Ho, H.Y. Social Influence's Impact on Reader Perceptions of Online Reviews. J. Bus. Res. 2015, 68, 883-887, doi:10.1016/j.jbusres.2014.11.046
- [57] Zhao, Y.; Wang, L.; Tang, H.; Zhang, Y. Electronic Word-of-Mouth and Consumer Purchase Intentions in Social Ecommerce. Electron. Commer. Res. Appl. 2020, 41, 100980, doi:10.1016/j.elerap.2020.100980
- [58] Kim, S.Y.; Martinez, B.; McClure, C.; Kim, S.H. eWOM Intentions toward Social Media Messages. Atlantic Mark. J. 2016, 5(1), 137-154.
- [59] Hua, L.Y.; Ramayah, T.; Ping, T. A.; Cheah, J.H.J. Social Media as a Tool to Help Select Tourism Destinations: The Case of Malaysia. Inf. Syst. Manag. 2017, 34, (3), 265–279, doi:10.1080/10580530.2017.1330004
- [60] Fishbein, M., Ajzen, I. Belief, attitude, intention, and behavior: An introduction to theory and research. Addison-Wesley: MA, USA, 1975; ISBN 978-021020892
- [61] Ajzen, I. Attitude, structure and behavior. In Attitude, structure and function, Pratkanis, A.R.; Breckler, S.J.; Greenwald, A.G. Eds.; Psychology Press: Hove, UK, 1989, ISBN 978-0412453403
- [62] Pavlou, P.A.; Fygenson, M. Understanding and Predicting Electronic Commerce Adoption: An

- Extension of the Theory of Planned Behavior. MIS. Q. 2006, 30(1) 115-143, doi: 10.2307/25148720.
- [63] Thomas, M.; Wirtz, B. W.; Weyerer, J.C. Determinants of Online Review Credibility and its Impact on Consumers' Purchase Intention. J. Electron. Commer. Res. 2019, 20(1), 1–20.
- [64] Hsu, C.L.; Lin, J.C.; Chiang, H.S. The Effects of Blogger Recommendations on Customers' Online Shopping Intentions. Internet Res. 2013, 23(1), 69–88,
- Doi: 10.1108/10662241311295782
- [65] Ting, M.S.; Goh, Y.N.; Isa, S.M. Determining Consumer Purchase Intentions toward Counterfeit Luxury Goods in Malaysia. Asia Pacific Manag. Rev. 2016, 21, 219-230. doi:10.1016/j.apmrv.2016.07.003.
- [66] Bhattacharya, A.; Srivastava, M.; Verma, S. Customer Experience in Online Shopping: A Structural Modeling Approach. J. Glob. Mark. 2019. 32(1), 3–16, doi:10.1080/08911762.2018.1441938
- [67] Fornell, C.; Larcker, D.F. Evaluating Structural Equations Models with Unobservable Variables and Measurement Error. J. Mark. Res. 1981, 18(1), 39-50, doi:10.2307/3151312
- [68] Hair, J.F.; Black, W. C.; Babin, B. J.; Anderson, R.E. Multivariate data analysis,8th ed; Huatai Publisher, Taipei, Taiwan, 2019; ISBN 9781473756540
- [69] Chin, W.W. The Partial Least Squares Approach for Structural Equation Modeling, In Modern Methods for Business Research, Marcoulides, G.A. Ed.; Lawrence Erlbaum Associates: Mahwah, USA, 1998; ISBN 9780805830934.
- [70] Venkatesh, V.L.; Thong, J.Y.; Xu, X. Consumer Acceptance and Use of Information Technology: Extending the Unified Theory of Acceptance and Use of Technology. MIS. Q. 2012; 36(1), 157-178, doi:10.2307/41410412
- [71] Berglund, E.; Lytsy, P.; Westerling, R. Adherence to and Beliefs in Lipid-Lowering Medical Treatments: A Structural Equation Modeling Approach Including the Necessity-Concern Framework. Patient. Educ. Couns. 2013, 91, 105–112, doi:10.1016/j.pec.2012.11.001
- [72] Kock, N. Using WarpPLS in E-Collaboration Studies: Descriptive Statistics, Settings, and Key Analysis Results. Int. J. e-Collaboration. 2011, 7(2), doi:10.4018/jec.2011040101
- [73] Quach, S.; Thaichon, P., Dark Motives-Counterfeit Selling Framework: An Investigate on the Supply Side of the Non-Deceptive Market. Mark. Intell. Planning. 2017, 36(2), 245–259, doi:10.1108/MIP-04-2017-0069

Citation: Ching-Hui Lin et.al. "College Students Purchasing Knock-off Sports Shoes: Electronic Word of Mouth and Peer Influence." International Journal of Sports and Physical Education (IJSPE), vol 9, no. 1, 2023, pp. 23-35. Doi: http://dx.doi.org/10.20431/2454-6380.0901004.

Copyright: © 2023 Authors. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.