

The Effect of Social Media Marketing Facebook Towards Purchase Intention of Security Training Caraka Sakti Utama in Indonesia

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Abstract

There are 1,6 million people work as security officers in Indonesia (Simamora 2020) . This job's demand increases year by year along with the development and improvement of companies in Indonesia. To be a security officer, someone needs to gain at least Gada Pratama qualification. The mandatory of conducting security training before getting a job is stated in Police Chief Regulation (KAPOLRI 2020). Caraka Sakti Utama is one of official companies that conduct security training in West Java which has legal permit from Police Chief of Republic Indonesia. In Police Chief Regulation stated that only Police Institution of Education and companies whose Operational Permit from Police Chief are able to conduct security training. There are 200 security training companies located in West Java that makes tight competition among companies. To attract more customers, Caraka Sakti Utama uses seven social media platforms dominantly Facebook. Based on the information above, this study is aimed to analyse the effect of Facebook social media communication, Brand Awareness and WOM to Purchase Intention of Caraka Sakti Utama's new customers. This study uses Quantitative Method. Population of this study is prospective costumers who follow Caraka Sakti Utama's Facebook account and contacted the company through Whatsapp messaging application. Sample of this study is 210 participants. Sampling Technique used in this study is simple random sampling. Data analysis technique used in this study is Structural Equation Modelling (SEM) with the help of Smart PLS 3.0 software.

Keywords

Social Media Marketing, Brand Awareness, Word of Mouth, Purchase Intention, and SEM PLS.

1. Introduction

Caraka Sakti Utama is a security training company with a legal permit from the Indonesian Police Headquarter, Jakarta. Located in Subang, Cirebon, Purwakarta, and Jakarta, this company regularly conducts security training for the public on a monthly basis (Utama n.d.). The participants are people who want to be security officers. As stated in National Police Regulation (KAPOLRI 2017), people who wants to become a security officer, he or she have to pass security training. Caraka Sakti Utama uses several social media platforms for their marketing purposes, such as Facebook, YouTube, TikTok, Instagram, WhatsApp (WA) marketing, and email marketing to attract new customers. Among all their social media platforms, the reach and interaction (engagement) on Caraka Sakti Utama's Facebook account has the highest number. Additionally, their Facebook communication brings the company the highest number of student enrolments compared to other companies that do not use social media platforms for their marketing tools. The number of participants who register at Caraka Sakti Utama is the highest number among other companies in every batch. This is predicted to happen as the impact of their Facebook communication. That being said, there has not been

research conducted on this matter, hence the importance to study it to confirm if social media has an impact on purchase intention.

1.1 Objectives

This research is aimed to find out the variables which give high effect to Purchase Intention of security training Caraka Sakti Utama in Indonesia. We Are Social stated that Indonesia has 191 million active users of Social media including Facebook. Facebook has the second highest users after Whatsapp around 84,8 percent (Hootsuite 2022). Using social media, company can directly communicate and interact with costumers so that company has feedback from the costumer to improve customer experience better. Joining social media, brands also decrease budget for marketing but the ads still can be accessed by the costumers. By conducting this research, we try to identify those variables which give high affect during campaign on Facebook and to adopt the strategies to increase high enrolment of security training by building loyal costumers.

2. Literature Review

The American Marketing Association defines marketing as the activity, set of institutions, and processes for creating, communicating, delivering, and exchanging offers that have value for customers, clients, partners, and society at large (Kotler & Keller 2012). Marketing is also defined as a social and managerial process by which individuals and groups obtain what they need and want through creating and exchanging products and values with others (Kotler et al. 2005). There are three main types of media channels marketers that need to consider (Chaffey 2014): 1) Paid media. These are bought media where there is an investment to pay for visitors, reach or conversions through search, display advertising networks, or affiliate marketing. Offline, traditional media like print and TV advertising and direct mail remain important, accounting for the majority of paid-media spend; 2) Earned media. Traditionally, earned media has been the name given to publicity generated through PR invested in targeting influencers to increase awareness about a brand. Now, earned media also includes word-of-mouth that can be stimulated through viral and social media marketing and includes conversations in social networks, blogs, and other communities; 3) Owned media. This is the media owned by the brand, can be online or offline. Online, this includes a company's websites, blogs, email list, mobile apps, or social presence on Facebook, LinkedIn, or Twitter. Offline, owned media may include brochures or retail stores. Today consumer have all kind of information about brand, company and product just on one click and he/she has freedom to share this information with their community which force the brand manager to be active regarding any news about brand and have direct interaction with their customer to maintain their brand image and search for more loyal customer (Keller 2009). Some activities that are considered social media communication: 1) Opinion Seeking is the state where any person seeks any supported argument. It is a physiological need of human that gives satisfaction and help them make better decisions (Chu & Kim 2011). With this in mind, we propose that H1. Opinion Seeking has a positive effect on Purchase Intention; 2) Viral Advertisement messages spread like fire. It is like any chemical material that catches fire and spreads within minutes in all environments. This is the same as if an ad gets viral on social where, within minutes, it spreads all around the social media platform (Todt 2009). For this media communication, we argue that H2. Viral Advertisement has a positive effect on Purchase Intention; 3) Brand Page Commitment (BPC) is a long-term relationship building method between brands and their consumers, due to which the consumers feel directly connected with the brands. It has a positive physiological impact on consumer minds (Hutter et al. 2013). Considering that, we propose that H3a. Brand Page Commitment has a positive effect on Purchase Intention and H3b. Brand Page Commitment has a positive effect on Brand Awareness; 4) Lack of Irritation refers to the absence of irritation of advertisements. "When advertising employs techniques that annoy, offend, insult, or are overly manipulative, consumers are likely to perceive it as an unwanted and irritating influence" (Ducoffe R.H. 1996). Taking this into account, we propose that H4a. Lack of Irritation has a positive effect on Purchase Intention and H4b. Lack of Irritation has a positive effect on Word of Mouth; 5) Word of Mount (WOM) is defined as the act of exchanging marketing information among consumers and plays an essential role in changing consumer attitudes and behavior towards products and services (Hepp, 1955). For this communication, we propose that H5. Word of Mouth has a positive effect on Purchase Intention; 6) Brand Awareness is related to the strength of the resulting brand node or trace in memory as reflected by consumers' ability to identify the brand under different conditions (Keller, 2008). Considering this, we propose that H6. Brand Awareness has a positive effect on Purchase Intention; 7) Purchase Intention is a decision-making process where consumers make the decision to purchase from the brand (River et al. 2010). With this in mind, we propose that H7a. Brand Page Commitment through Brand Awareness has positive effect on Purchase Intention and H7b. Lack of Irritation through WOM has positive effect on Purchase Intention (Figure 1).

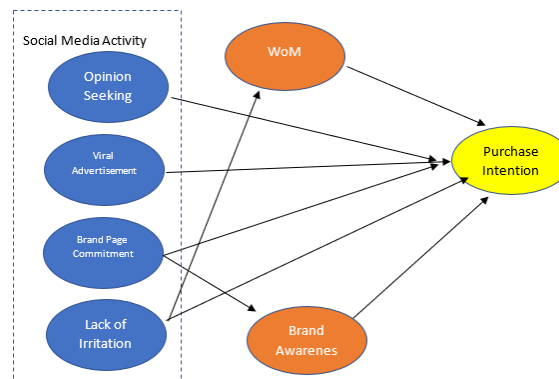


Figure 1. Research Model

3. Methods

This study used a quantitative method. The population consists of 400 prospective customers who followed security training Caraka Sakti Utama's Facebook account and have contacted security training Caraka Sakti Utama through WhatsApp. The sample includes 210 participants that had been selected using a simple random sampling. The data generated from the sample were analyzed using the Structural Equation Modelling (SEM) technique on SmartPLS.

4. Data Collection

To collect the data, this research set up questionnaires through online link and broadcasted via Whatsapp to prospective consumers of security training Caraka Sakti Utama. After analysing and purifying the data, 210 feedbacks remained for further analyses. Of the respondents 95 percent were male and 5 percent were female. Of the respondent 41 percent were aged between 18 and 25 and 39 percent were aged between 26 and 35 and 17 percent were aged between 36 and 45 and 3 percent were aged between 46 and 65 . Of the respondent 41 percent used social media 1 and 3 hours a day and 28 percent used social media 4 and 6 hours a day and 10 percent used social media 7 and 9 hours a day and 21 percent used social media over 10 hours a day. Of the respondent 42 percent got monthly salary IDR1.000.000 and IDR2.900.000 and 53 percent got monthly salary IDR3.000.000 and IDR4.900.000 and 5 percent got monthly salary IDR5.000.000 and IDR6.900.000. Of the respondent 4 percent were graduated from Junior High School and 93 percent were graduated from Senior High School and 3 percent were graduated from University.

5. Results and Discussion

To test our hypotheses, we used structural equation modelling with SMART PLS 3.0. The measurement model was evaluated to analyse the internal consistency and reliability of the applied model. The Definition of the variable and the items are displayed in Table and indicate an appropriate structure. All indicators have good factor loadings and the respective factor reliabilities exceed the required reliability in structural equation modelling of 0.7 (Indrawati 2015).

The average variance extracted from the constructs can be judged as valid with values over 0.5 and thus, the convergent validity of the constructs can be seen as fulfilled (Hair et al. 2014) Discriminant validity was estimated by calculating the Fornell-Larcker-Ratio (Fornell & David F., 1981), Cross Loading, and Heterotrait and Monotrait Ratio. Concerning the path analysis of our model, the table 1 displays the results of our analysis. Brand Awareness is found positively and significantly impact Purchase Intention (0.002) Brand Page Commitment is found positively and significantly impact Brand Awareness (0.000). Brand Page Commitment is found not significantly impact Purchase Intention (0.562). Lack of Irritation is found positively and significantly impact Purchase Intention. Lack of Irritation is found positively and significantly impact Word of Mouth. Opinion Seeking is found not significantly impact Purchase Intention. Viral advertisement is found not significantly impact Purchase Intention. Word of Mouth is found not significantly impact Purchase Intention. Brand Page Commitment through Brand Awareness is found positively

and significant impact Purchase Intention. Lack of Irritatioin through Word of Mouth is found not significant impact Purchase Intention. Hence only 5 of 10 hypotheses were supported.

5.1 Numerical Results

Table 1. Reliability and Validity

No	Variable	Definition	Previous items	Current items	Item Name	Loading (0.7)	CA (0.7)	AVE (0.5)
1	Opinion Seeking (Chu S.-C., 2009)	Opinion Seeking is the state where any person seeks for any supported argument. Related their argument or a choice. It's physiological need of human. Which give satisfaction and as well as help to make better decision. (Chu S.-C. , 2009)	When I consider new products, I ask my contacts on the social networking site for advice.	When I consider Security Training enrollment, I ask my contacts on Facebook for advice.	OS1	0.977	0.951	0.953
			I like to get my contacts' opinions on the social networking site before I buy new products.	I like to get my contacts' opinions on Facebook before I enroll Security Training.	OS2	0.975		
2	Viral Advertisement (Chu S.-C., 2009)	Message that spread like fire. It's like any chemical material catch fire its spread within mint in all environments. Same if any ad get viral at social within mints its spread all around the social media platform. (Todt, 2012)	I would consider passing along viral advertising to someone I know.	I would consider passing along viral advertising of security training Caraka Sakti Utama to someone I know.	VA1	1.000	1.000	1.000
3	Brand page Commitment (Hutter & Hautz, 2009)	Brands page commitment is a long term relationship building method between	I get informed about Samsung news daily	I get informed about security training of Caraka Sakti Utama news daily	BC1	0.890	0.922	0.762
			I feel as a part of the	I feel as a part of the security	BC2	0.867		

		brands and its consumer. Due to which consumer feel directly connected with consumer. It has positive physiological impact on consumer minds. (Hutter & Hautz, 2009)	Samsung – Facebook Community	training Caraka Sakti Utama – Facebook Community				
			I participate in activities on the page very often	I participate in activities on the page of security training Caraka Sakti Utama very often	BC3	0.861		
			I miss something if I do not visit regularly	I miss something if I do not visit page of security training Caraka Sakti Utama regularly	BC4	0.840		
			It is fun for me to inspire others about Samsung	It is fun for me to inspire others about security training Caraka Sakti Utama	BC5	0.904		
4	Lack of Irritation (Hazem Rasheed Gaber et al, 2018)	Irritation of advertisements can be defined as: “when advertising employs techniques that annoy, offend, insult, or are overly manipulative, consumers are likely to perceive it as an unwanted and irritating influence” (Ducoffe, 1996, p. 23).	I feel that Instagram advertising are not irritating	I feel that Facebook advertising of security training Caraka Sakti Utama are not irritating	LI1	1.000	1.000	1.000
	Word of Mouth (Hutter & Hautz, 2009)	Word of mouth is a natural situation which occurs automatically which is part of Human behavior. Its impact on all kind of communication it can be positive or negative. Which pass from one	I talk very positive about Samsung	I talk very positive about security training Caraka Sakti Utama	WM1	1.000	1.000	1.000

		individual to another and spread like a fire in jungles. In WoM every communicator is a receiver and every receiver is a communicator. (Hutter & Hautz, 2009)						
5	Brand Awareness (Hutter & Hautz, 2009)	Brand awareness is consumer experience about brands. Brand awareness is probability that consumer have information about brand service, products and about all features of the brands. Brand awareness a knowledge richness about the brand and organization. (Dr. Malik, Ghafoor, & Iqbal, 2013)	I have no difficulties to remember Samsung	I have no difficulties to remember security training Caraka Sakti Utama	BA1	0.882	0.926	0.819
			know all Samsung models	know all qualification of security training Caraka Sakti Utama	BA2	0.915		
				When I am asked about security training, I remember security training Caraka Sakti Utama	BA3	0.926		
			I can distinguish the different Samsung Mode	I can distinguish the different security training Caraka Sakti Utama	BA4	0.896		
6	Purchase Intention (Hutter & Hautz, 2009)	After going through multiple stages. Consumer builds an intention to Purchase a brand. Purchase intention is a decision making process where consumer made decision to purchase the brand. (River, Tamborini, Eden,, &	I plan to buy a Samsung	I plan to enroll security training Caraka Sakti Utama	PI1	1.000	1.000	1.000

		Grizzard, 2010), Aim of the brand entire communication is that get influence consumer purchase decision. That he/she intentionally choose the particular brand. (Hutter & Hautz, 2009)					
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Value of Loading Factors of all Variables is greater than 0.70, it means positive relation among variables. Cronbach's alpha value of our all variables are greater than $\alpha > 0.7$ which shows our all relations of Questioner are positives. Average Variance Extracted (AVE) of my all variable are greater than 0.50 means all items are valid (Table 2 and table 3).

Table 2. Path Coefficients

No	Items	Original Sample	P Values	Result
1	Opinion Seeking → Purchase Intention	-0.034	0.631	Rejected
2	Viral Advertisement → Purchase Intention	-0.136	0.204	Rejected
3	Brand Page Commitment → Purchase Intention	-0.100	0.568	Rejected
4	Lack of Irritation → Purchase Intention	0.308	0.000	Accepted
5	Brand Page Commitment → Brand Awareness	0.790	0.000	Accepted
6	Lack of Irritation → Word of Mouth	0.800	0.000	Accepted
7	Word of Mouth → Purchase Intention	0.251	0.147	Rejected
8	Brand Awareness → Purchase Intention	0.563	0.003	Accepted

Table 3. Indirect effect

No	Items	Original Sample	P Values	Result
1	Brand Page Commitment → Brand Awareness → Purchase Intention	0.445	0.003	Accepted
2	Lack of Irritation → Word of Mouth → Purchase Intention	0.201	0.154	Rejected

Based on the findings, it can be summarized that five of the ten hypotheses were accepted. This is because P-value are under 0.05 (Indrawati, 2015).

5.2 Graphical Results

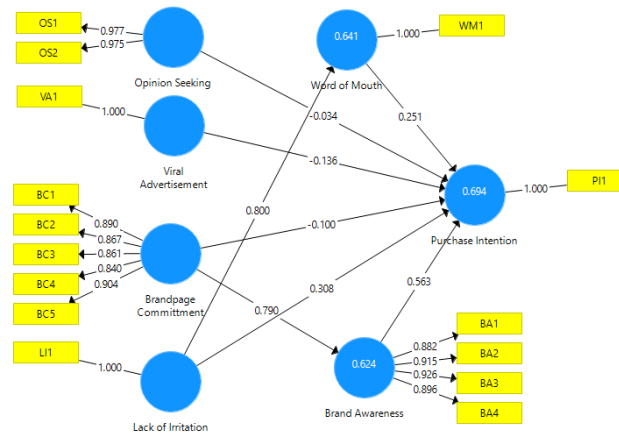


Figure 2. Loading Factors

All loading factors are above 0.7 means all criterions are valid (Figure 2).

Discriminant Validity

	Brand Awaren...	Brandpage Co...	Lack of Irritation	Opinion Seeking	Purchase Inten...	Viral Advertise...	Word of Mouth
BA1	0.882	0.747	0.664	0.587	0.713	0.702	0.842
BA2	0.915	0.716	0.576	0.553	0.602	0.641	0.691
BA3	0.926	0.710	0.666	0.551	0.778	0.661	0.785
BA4	0.896	0.685	0.661	0.540	0.765	0.619	0.710
BC1	0.732	0.890	0.780	0.674	0.650	0.741	0.793
BC2	0.732	0.867	0.751	0.605	0.601	0.736	0.759
BC3	0.645	0.861	0.641	0.669	0.489	0.699	0.578
BC4	0.612	0.840	0.583	0.658	0.473	0.706	0.550
BC5	0.709	0.904	0.707	0.647	0.600	0.777	0.757
LI1	0.711	0.800	1.000	0.621	0.707	0.740	0.800
OS1	0.614	0.723	0.617	0.977	0.492	0.731	0.661
OS2	0.589	0.728	0.596	0.975	0.472	0.734	0.630
PI1	0.793	0.651	0.707	0.494	1.000	0.582	0.763
VA1	0.725	0.839	0.740	0.750	0.582	1.000	0.765
WM1	0.839	0.797	0.800	0.662	0.763	0.765	1.000

Figure 3. Cross Loading

All value of loading factors are above value of cross loading means items are valid (Figure 3-5)

Discriminant Validity

	Brand Awaren...	Brandpage Co...	Lack of Irritation	Opinion Seeking	Purchase Inten...	Viral Advertise...	Word of Mouth
Brand Awareness	0.905						
Brandpage Co...	0.790	0.873					
Lack of Irritation	0.711	0.800	1.000				
Opinion Seeking	0.617	0.743	0.621	0.976			
Purchase Inten...	0.793	0.651	0.707	0.494	1.000		
Viral Advertise...	0.725	0.839	0.740	0.750	0.582	1.000	
Word of Mouth	0.839	0.797	0.800	0.662	0.763	0.765	1.000

Figure 4. Fornell-Lecker Criterion

Discriminant Validity

	Brand Awaren...	Brandpage Co...	Lack of Irritation	Opinion Seeking	Purchase Inten...	Viral Advertise...	Word of Mouth
Brand Awareness							
Brandpage Co...	0.850						
Lack of Irritation	0.737	0.826					
Opinion Seeking	0.657	0.796	0.637				
Purchase Inten...	0.821	0.671	0.707	0.506			
Viral Advertise...	0.753	0.873	0.740	0.769	0.582		
Word of Mouth	0.869	0.820	0.800	0.678	0.763	0.765	

Figure 5. Heterotrait-Monotrait

HTMT table shows that all variables are no exceed than 0.9 means all variables are valid.

5.3 Proposed Improvements

This study was conducted on security training Caraka Sakti Utama in Indonesia. Number of 210 sample is taken from members of Caraka Sakti Utama Facebook fanpage, hance only members of this fanpage are included. Therefore a sampling bias may affect our findings. Other companies from different product may be investigated in the next research. Researchers should elaborate and add more variable in this model in the future to refine the model and deepen knowledge of social media's influence on the factors leading purchase decision and conduct a research with same model but with another population in Indonesia.

5.4 Validation

Previous research stated by Jamali Khan that annoyance; viral Advertisement and Opinion Seeking don't have any direct effect on the purchase intention of the consumer. But Brand page commitment has indirect effect on purchase intention; as well Brand Awareness and word of mouth have direct effect on Purchase intention (Jamali & Khan 2018). Another result showed by Hutter the positive effects of consumers' social media engagements on brand awareness, WOM activities and purchase intention are strong arguments for the relevance of social media in respect to the management of brands (Hutter et al. 2013)

6. Conclusion

Our findings represent that engagement with a Facebook fanpage has a positive effect on consumers' Brand Awareness, Brand Page Commitment, Lack of Irritation and Purchase Intention. The results further indicate that the

Lack of Irritation with the fan page has a positive effect on Purchase Intention and Word of Mouth. Moreover, Brand Page Commitment also has a positive effect on Purchase Intention through Brand Awareness.

References

- Chaffey, *Dave Chaffey, digital business and E-commerce management: Strategy, implementation and practice. In Management and Marketing*, Vol. 9, Issue 3, 2014.
- Chu, S. C., & Kim, Y., Determinants of consumer engagement in electronic Word-Of-Mouth (eWOM) in social networking sites, *International Journal of Advertising*, 30(1), 47–75, 2011.
- Ducoffe R.H., Advertising Value and Advertising The Web, *Journal of Advertising Research*, October, 21–35, 1996.
- Fornell, C., & David F., L., Structural Equation Models with Unobservable Variables and Measurement Error: Algebra and Statistics, *Journal of Marketing Research*, XVIII (382), 8, 1981.
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E., *Multivariate Data Analysis*, Pearson New International Edition, 816, 2014.
- Hepp, A. Katz, E. / Lazarsfeld, P. F., Personal Influence. Springer VS, Wiesbaden, pp. 293-296, 2019
- Hootsuite, *We Are Social*. <https://andi.link/hootsuite-we-are-social-indonesian-digital-report-2022/>
- Hutter, K., Hautz, J., Dennhardt, S., & Füller, J., The impact of user interactions in social media on brand awareness and purchase intention: The case of MINI on Facebook, *Journal of Product and Brand Management*, 22(5), 342–351, 2013.
- Indrawati, *Metode Penelitian Manajemen dan Bisnis Konvergensi Teknologi Komunikasi dan Informasi*, 1st Edition, Refika Aditama, 2015.
- Jamali, M., & Khan, R., The Impact of Consumer Interaction on Social Media on Brand Awareness and Purchase Intention! Case Study of Samsung, *Journal of Marketing and Logistics*, August 2018, 114–129, 2018.
- KAPOLRI, *Sistem Manajemen Pengamanan Organisasi, Perusahaan Dan/Atau Instansi/Lembaga Pemerintah*, 2017.
- KAPOLRI, *Peraturan Kepolisian Negara Republik Indonesia Nomor 4 Tahun 2020 Tentang Pengamanan Swakarsa*, 2020.
- Keller, K. L., Building strong brands in a modern marketing communications environment, *Journal of Marketing Communications*, 15(2–3), 139–155, 2009.
- Kotler, P., & Keller, K. L., A framework for marketing, *Sloan Management Review*, 32, 94–104, 2012.
- Kotler, P., Wong, V., Saunders, J., & Armstrong, G., *Principles of Marketing*, Pearson Education, Vol. 38, Issue 151, 2005.
- River, U. S., Tamborini, . N., E. B., & Grizzard, M., *Consumer Behavior: Buying, Having and Being*, Pearson, 2010.
- Simamora, A, *3 Kali Lipat dari Polisi, Jumlah Satpam tembus 1.6 Juta, seragam mirip Polisi mulai 2021*. Tribun Batam, Available: <https://batam.tribunnews.com/2020/09/15/3-kali-lipat-dari-polisi-jumlah-satpam-tembus-16-juta-seragam-mirip-polisi-mulai-tahun-2021>, Accessed on July 24, 2022
- Todt, H., *The Use of Media for Advertisement – Trend or Strategy? May 2009*, 67–74, 2009.
- Pusdikcaraka.id, *Sekolah Satpam*, Available: <https://pusdikcaraka.id>, Accessed on Sunday, July 24, 2022

Biographies

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Indrawati is presently a lecturer of Master in Management Telkom University since 1990. Earned her Philosophy of Doctor (Ph.D) in Management from Faculty of Management, Multimedia University (MMU) Malaysia. She is interested in conducting research around Technology Adoption in ICT and other areas related to marketing such as Competitive Intelligent, New Product Development, New Product Acceptance, Creative Industry, Competitiveness Analysis, E-Commerce and Knowledge Management. She has published over 230 articles in many publications such

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