Do Social Media Virtual Communities Support Purchase Decision-Making?

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Abstract

In this article, we investigate whether virtual communities gathered around influencers can support decision-making in the purchasing process. Using data from viewers' opinions under YouTube Influencer's video, the netnography method, and Simon's rational decision-making theory, we investigate: (i) which phases of the purchasing decision-making process can be supported by virtual communities; (ii) what behaviours, structures, and decision-making sequences are visible across the entire virtual community network studied. The results of our study prove that social media content creators as influencers and their virtual communities can affect all phases of purchasing decision-making.

Keywords: purchasing decision-making, influencers, social media, virtual communities.

1. Introduction

Social media (SM) platforms such as Instagram, Facebook, YouTube (YT) and others enable people to create virtual communities (henceforth VCs) where they can establish relationships, exchange knowledge and interests, and obtain social support. Often, these VCs cluster around their favorite SM content creators - influencers (henceforth SMI). SMIs are individuals with a significant following who promote products or services, using their influence to shape consumer behaviour [12]. They collaborate with brands to promote their products or services to their followers [17]. This collaboration may include sponsored posts, product reviews, and/or campaigns led by SMIs [2]. SMIs recommendations can influence consumer purchasing decisions, making them important brand marketing partners [5], [20]. Thus, marketers increasingly use VCs gathered around SMIs as a new resource that influences sales by disseminating information about the brand, quality, price and many other features of the products and/or services sold.

The study of VCs around SMIs fits into the broader context of digital transformation, which is redefining traditional models of marketing communication and purchasing (PDM) decision-making (DM) processes. Contemporary digital transformation includes not only the implementation of technology but also changes in consumer behaviour and the ways brands interact with their recipients. Communities formed around SMIs become active participants in the digital ecosystem, generating content, recommendations, and opinions that influence the choices of other users. The purchasing process is moving to the online sphere, where decisions are increasingly made based on information from informal, social sources. Thus, these communities can be treated as informal mechanisms supporting the digital transformation of companies in the area of marketing and sales.

The term "virtual communities" is typically defined in research as relating to communication and relationship building [16] since relational and emotional connections and SMIs are crucial for maintaining VCs [8]. The authors of [22] noted that sharing shopping information among group members, particularly regarding product evaluations,

preferences, or opinions, is especially prevalent when VCs have strong social connections and mutual trust.

In [26], the researchers indicated that recommendations from online members help consumers make purchasing decisions about everyday products. Members of VCs engage in various discussions and are easily influenced to mimic the actions of others. In turn, the authors of [14] demonstrated that when customers intend to use shopping information as a decision aid, they will carefully examine members' recommendations and explanations before making their final decision.

After reviewing the current literature, we identify a research gap that concerns uncovering the structures and sequences of the PDM process, specifically based on content generated by participants in VCs. For an empirical part of this study, we selected the community gathered around YT Influencer and the netnography method was used. Thus, the purpose of this study, with its exploratory nature, is to answer the following research questions (RQ):

RQ1: Can virtual communities support DM regarding the purchasing process of a technology-based product?

RQ2: Which phases of the purchase decision-making process can be supported by virtual communities?

To the best of our knowledge, this study is the first to explore the opinions of the YT community gathered from an SMI channel in the context of tracking the structure and phases of the purchasing process. Our study, which integrates various research areas with information streams from SM users, adds significant value by confirming that SMIs and their followers can impact all stages of the PDM process. This finding opens new perspectives for sales managers, marketing professionals, and ordinary consumers planning their purchases.

The rest of the paper proceeds as follows: in the next section, we discuss the related literature; we then outline the study methodology, present and discuss research findings, and conclude, pointing to the study's limitations and future work.

2. Background and related literature

2.1. The decision-making process

The DM process involves making an informed choice using relevant information, considering the pros and cons of all possibilities, weighed against the decision-maker's personal beliefs [27]. This process can range from structured approaches to more anarchic ones, and the decision-maker can utilize various sources of knowledge to support their final choice.

The first research stream, rational DM, involves sequential and analytical activities that lead to structured decisions in well-defined environments, exemplified by Simon's [25] rational DM theory. The second stream views DM as an anarchistic process, marked by unstructured problems and irrational decisions in uncertain environments. An example is the model of [4], which likens the DM process to "garbage", lacking structure or clear choices, with alternatives arising at any stage.

Simon's [25] model is a widely recognized DM framework consisting of three phases: intelligence, design, and choice. In the intelligence phase, the decision-maker gathers information and identifies the problem's causes. The design phase focuses on understanding alternatives and their potential consequences. Finally, in the choice phase, the decision-maker selects the option that provides the best utility.

The authors of [9] expanded the original model by adding two phases: implementation, where a decision is enacted, and monitoring, which involves assessing its effectiveness through feedback and necessary corrections for future decision-making. Table 1 indicates that Simon's extended model (five phases) for the general DM and PDM processes shows few differences, signifying a strong alignment between them.

Several DM models exist in the literature, e.g., the one by [6], which was created by synthesizing findings from the literature. However, we believe the extended DM model presented in Table 1 is particularly universal, comprehensive and effectively captures the nuances of DM interactions. For this reason, we chose to use it in our study to examine

whether the product information discussed by VCs influences their members' purchase decisions.

Table 1. General decision-making process vs purchase decision-making

No	Phase	Decision-making process	Purchase decision-making
1	**Intelligence**	The decision maker collects information about the problem.	The purchase maker gathers information about the product/service.
2	**Design**	Recognition and understanding of possible alternatives and consequences of the future decision.	Identifying and understanding competitive alternatives for a product or service and the potential consequences of future decisions.
3	**Choice**	Identified alternatives are narrowed down to the best utility option that leads to a decision-maker's choice.	Identified alternatives are narrowed down to the best utility option that leads to a decision-maker's choice.
4	**Implementation**	The decision is put into effect.	The purchase is performed.
5	**Monitoring**	Monitoring includes final activities that evaluate the implementation of the decision, e.g. conclusions and possible adjustments for developing direction for future DM situations.	Monitoring includes final activities that evaluate the purchase decision, e.g. posting opinions about product/service.

Source: authors' own based on [25] and [9].

2.2. Social media influencers' impact on purchasing processes

The digital era has transformed shopping, learning, and entertainment. SMIs leverage SM platforms to create engaging content and build communities around their channels. Individuals share experiences and form bonds, as demonstrated by [22], where it was found that strong social connections and trust among community members drive online shopping activities.

The impact of SMIs is not limited to marketing and content creation, as at least some of them use their platforms to raise awareness of social and ecological issues, e.g. promote social responsibility or sustainable development goals, and advocate for climate action [13]. Previous studies have examined the effectiveness of SMIs recommendations [3] and their impact on sales, brand attitudes, and consumer preferences [19], [21]. The authors of [1] recommend incorporating user-generated content and gathering additional information to improve DM and reduce risks. Additionally, the researchers of [7] found that an increase in review quantity boosts sales, regardless of review sentiment.

Participation in VCs fosters social networks and long-term relationships, influencing members' purchase preferences. Online community recommendations significantly impact consumer decisions [26]. When using shopping information, customers carefully analyze community members' recommendations before making final choices [14].

Motivated by these findings and the research of [23, 24], we plan to explore the community posts on a selected YT influencer's channel in terms of the usefulness of the published opinions in the purchasing process.

3. Research approach

This research aims to examine the PDM process supported by VC-generated content and identify the phases and DM sequences in product purchasing. It seeks to address the two research questions outlined in the Introduction Section. To achieve these, this study utilizes netnography as the primary method. This qualitative approach helps understand human behavior in the analyzed situation and context. Netnography, or virtual ethnography, is a social science approach focused on studying online communication. It gathers information about consumers engaged in discussions, product comparisons, reviews, ratings, and information exchange. This method emerged due to the increasing digitization of everyday life.

Thanks to an in-depth analysis of a given community, one can understand its logic in a richer way than using other types of research [10]. Taking into account our research objectives, netnography seemed to be an appropriate research method that could help to understand online user behavior and their experiences, as well as assess the existence of DM phases and the structure of purchasing processes.

According to [15], each netnographic study is based on four basic pillars: study planning, information collection, data analysis, and interpretation of results (Section: Findings and discussion). These are discussed in the following Subsections.

3.1.   Study planning step

The research planning stage involves defining study objectives and selecting a relevant SM platform for observation. For this study, we chose YouTube, focusing on VCs' posts under an influencer's video. To avoid the impression of promoting or advertising a product, we decided to anonymize the SMI and the company of the product he/she influenced. It's important to select the appropriate influencer channel for data collection. The authors of [11] found that an SMI with a large following that provides endorsements is significantly associated with higher source credibility than those with fewer followers. Based on this observation, we selected YT SMI – M. B., who is an experienced SMI with a very large audience (he has 19.7 million subscribers and 1.7k videos). In the chosen video (which reached more than 14 million views), M. B. shares that he has not paid for electricity in a year due to the Solar Roof installation and explains how solar systems work. The product selected for this study - the Solar Roof - represents a significant financial investment and involves complex technological features that require consumers to engage in in-depth information gathering and careful evaluation prior to purchase. This type of technology-based, high-involvement product often generates detailed consumer discussions around performance, reliability, and return on investment, making it a relevant context for studying purchase decision-making processes. It should be emphasized that we do not intend to evaluate the SMI, the product, or the company itself. The resources selected for the study have, in our opinion, valuable research value. Once these issues are identified and defined, data collection can begin. It is essential to choose a VC that represents a diverse range of stakeholders. A preliminary manual, pilot study of comments confirmed the accuracy of the influencer's selection and the VC. We expect users of the selected VC related to the influencer's channel to have sufficient knowledge and experience to provide valuable text data for our study.

3.2.   Information collection

In this phase, we collect information from text data, i.e. posts placed on the selected influencer channel. In line with the suggestions of [15], we used two types of information in this process: first, communication between different members of VCs in the form of channel posts (archived data), and secondly, the researcher's own notes and comments from observations that emerged as fresh research perspectives from the collected data.

We proceed from the assumption that using VCs on the SMI channel allows decision-makers with similar purchasing dilemmas to benefit from solutions developed by community members with comparable experiences. This can enhance various phases of the decision-making process.
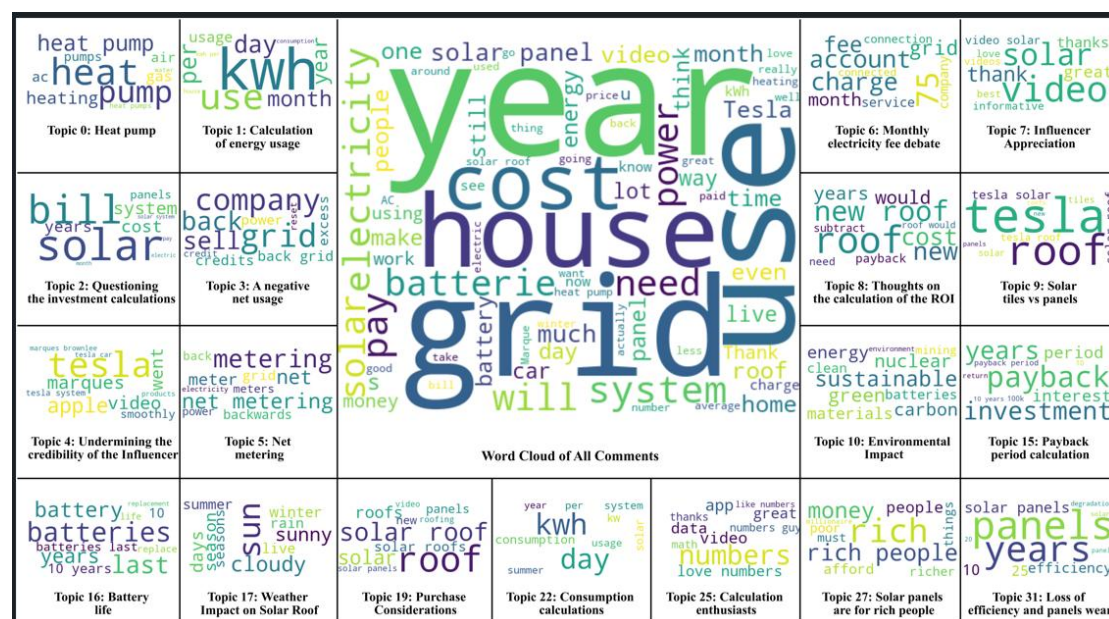

Fig. 1. Word Cloud of All Comments and Selected Topics (Source: authors' own elaboration using the Python package word cloud, along with matplotlib for visualization)

To gather relevant data, we used the YouTube Data API v3 to extract comments from the selected video. The API allowed us to retrieve the comment threads associated with the video, including replies. Since our focus was on English-language opinions, we applied a filtering process using language detection to exclude non-English comments. This approach resulted in a dataset of 25,832 English-language opinions on Solar Roof, published from August 2023 to November 2024. Due to the large number of posts, we start with topic modeling using BERTopic, which is well-suited for this type of analysis. This allowed us to obtain 32 topic threads. Example topics represented in a word cloud are presented in Fig. 1. Then, themes were labeled and coded according to Simon's extended model (in line with phases from Table 1) by recognizing the PDM phase, which helped structure the data. Ultimately, our data set was then used to conduct three types of analyses: content analysis, conversational analysis and discourse analysis.

3.3. Data analysis

The data analysis process was based on netnography guidelines [15], and performed analyses of user posts enriched the study with additional details. First, content analysis not only made it possible to identify five phases of the PDM process but also made it possible to understand who mainly generated and delivered content (by assigning roles Seekers and Advisers).

Second, conversational analysis enabled us to capture and describe the sequential pattern of participants' interactions. By dividing the conversations into phases of the DM process, it was possible to map threads of discussion flow during the analysis process.
Third, discourse analysis helped understand the context behind the texts, such as the users' behavioral aspects and the published posts' basic mood.

4. Findings and discussion

The study approach based on netnography guidelines provided essential details and depth insights into the entire research process.

Content analysis was utilized in our study to identify the five phases of the PDM process and to discern the primary contributors of content. The analysis revealed that the examined community consists of more Advisers (68.0%) than Seekers[1] (32.0%). This is consistent with [24] findings and their insights for exploring online social networks for health and finances. In the PDM phases, the design phase has the highest number of Advisers, indicating that they suggest DM models that include alternatives and options tailored to the Seeker's query.

Advisers and Seekers follow similar pathways in the DM process. Advisers typically initiate the conversation by sharing their advice and personal experiences during the Intelligence phase. In a similar manner, Seekers begin by searching for basic information related to their decision, starting with the Intelligence phase and progressing through the subsequent DM phases.

Analyses revealed that the film was well-received by laypeople, experienced users, and specialists who shared their insights and provided advice from their perspectives. We present two opinions, for example:
- the technical expert - user @thejoelmeister: "I've been working in the solar industry for over 14 years and this is hands-down one of the best videos out there explaining solar, batteries, and home energy use. Such a great resource for the public - thank you!" ;
- the experienced user - @nobodyhome2318: "We purchased our solar array in 2017 (...) we pay $30 a month where I live for a grid connection fee. (...)".

Conversational analysis enabled us to map the sequence of identified interactions between participants during the discussions concerning the individual phases of the DM process (Fig. 2).

Three phases – 'Choice', 'Implementation' and 'Monitoring' - have the lowest user engagement. 'Choice' included threads dedicated to information seekers, while the

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[1] To reveal this, we conducted a zero-shot classification using a pre-trained language model with the labels 'Adviser' and 'Seeker' on a randomly selected sample of 1000 comments.

'Implementation' and 'Monitoring' phases involved mainly experienced users and specialists sharing their knowledge and observations (Advisors).

Intelligence Phase: The set of VC comments contains very rich content that touches on many important topics relevant to the intelligence phase of the decision-making process. There are no search features on the YT platform, thus, this makes it difficult to find the right thread and is very time-consuming. Thanks to the large group of Advisers, the community, and especially Seekers, receive a wide range of information and useful knowledge that would be difficult to obtain in any other way. Moreover, our analyses revealed the largest number of posts assigned to this stage. Therefore, as expected, the platform under study can improve the intelligence phase of the DM process.
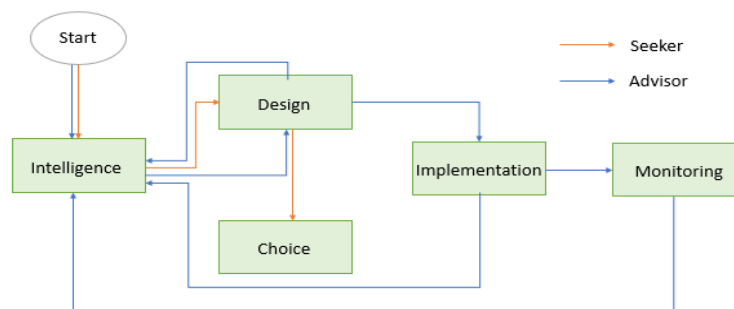

Fig. 2. Mapping the main structure and sequence of discourse to DM phases (Source: authors' own)

Design Phase: is all about recognizing and understanding competitive alternatives for purchase. Based on our study, we conclude that the VC on YT offers decision-makers the opportunity to explore alternative solutions. This is achieved in two main ways users can: (i) ask the community for advice by posing specific questions, or (ii) independently browse threads with posts that interest them, thereby building the knowledge they need. Through this way, decision-makers can access proven solution models that have been tested by other users worldwide.

Choice Phase: involves narrowing down the identified alternatives to determine the best option for usability—the decision-maker's final choice. In our study during observed text conversations, it was noted that the choice made by users was very rare and in most cases was not transparent. Users emphasized the high investment costs as a significant barrier to DM.

Implementation Phase: is more about physical processes and means that the purchase is performed. People rarely describe such processes. In the case studied (perhaps due to the high cost of purchase and the desire to brag on the forum), it was possible to identify such individual opinions, e.g. „We purchased our solar array (...) Best money I have ever spent (…)".

Monitoring Phase: includes final activities that evaluate the purchase decision, e.g. posting opinions about a purchase. There is a group of people who published opinions and, thus, returned to share the results and consequences of their decisions, which is evidence of the presence of this phase. The study confirmed that these people, as experts (Advisors), share their experiences with the rest of the community. This contributes to building the knowledge base necessary for the 'Intelligence' phase. An important finding from this part of the study is the observation that the sequence of steps of Seekers (naturally and logically) starts from the initial stages of the PDM process, while Advisors engage in the entire PDM process.

The discourse analysis of the research data set revealed that the reviewed VC is diverse in terms of both experience and geographical location. It includes laypeople interested in the topic, experienced users, and specialists, providing a broad array of information and practical experiences from VC members worldwide. Most conversations were evidence-based, structured, and unemotional. The rhetoric and subject matter reveal an increasing awareness and interest in renewable technologies. However, there are still significant barriers related to installation costs and logistics. Most comments express support for the development of renewable energy technologies, highlighting the accessible and substantive content presented in the film by the SMI.

In summary, our study provides grounds for concluding that the studied YT community can support the PDM process (RQ1). In the entire process, it is important to emphasize the role of SMI, which attracts a wide range of visitors to its channel with professionally

prepared content and keeps its members engaged. A platform such as YT uses algorithms to suggest content, products, or services that may match the user's preferences. Although they facilitate the choice, they can also limit exposure to alternative options. Therefore, it is crucial to attract experts who can provide high-quality and peer-reviewed information for DM. Our study proved that all phases of the PDM process were supported by the studied VC (RQ2). The analyses identified more Advisors than Seekers. The obtained findings are consistent with the observations of [23] and [24], even though the studies concerned different VCs.

5. Conclusions

SM is primarily viewed as a marketing instrument, with limited emphasis in the literature on its role as a DM tool. This paper aims to correct this imbalance.

SM content about products and brand recommendations created by SMIs with a large number of followers on SM generates a huge potential resulting from online social relationships that can be used to increase product sales and build brands. On the other hand, user opinions reveal a lot of useful information and practical experiences that can be helpful in the DM process. As our study proves, VCs offer valuable insights and support throughout DM. However, it is important to triangulate the information gathered. The availability of information in an open SM environment does not ensure its reliability or applicability to every individual's circumstances.

In summary, our study shows that SMIs and their VCs are not only valuable products of digital transformation but also active drivers of influence on the consumer environment. The VCs formed around SMIs generate substantial amounts of data, which, when combined with analytics, represents valuable capital for driving digital transformation.

The study results may benefit: (i) marketing practitioners and brand managers by enhancing their understanding of SM communication in the consumer DM process; (ii) SMIs in adapting influence roles within their VCs; (iii) entrepreneurs choosing SMIs for product promotion; and (iv) consumers facing PDM situations.

Although our study contributes to the research field, it is not free from some limitations. Firstly, the inherent limitation arises from the selection of a single, purposefully chosen unit for the study. By focusing on just one influencer's YouTube community, the generalizability of our findings may be restricted. Different influencers, with varying types of audiences, may lead to different DM patterns and support for purchases. Secondly, the study examined only English language comments, which may introduce a language bias and limit the applicability of the results to non-English-speaking communities. Thirdly, our study only investigated a single product, the Solar Roof, which restricts the ability to generalize the findings to other product categories. A multi-product analysis could offer a more comprehensive view of VC influence across various purchase decisions. Fourthly, while textual data from comments were analyzed, other content types such as videos, images, and links shared within the community were not considered, which could potentially provide further insights into user engagement and DM processes. Future research could integrate these diverse content types to explore how multimedia influences consumer behavior. Finally, the influence of the recommendation algorithms on the YT platform was not considered in this study. These algorithms can significantly shape user engagement by promoting specific content, which may affect the types of interactions and discussions taking place within the VC.

References

1. Aggarwal, R., Singh, H.: Differential influence of blogs across different stages of decision making: The case of venture capitalists. MIS Quarterly (2013)
2. Arriagada, A., Ibáñez, F.: You need at least one picture daily, if not, you're dead: Content creators and platform evolution in the social media ecology. Social Media+ Society, 6(3) (2020)
3. Barhorst, J.B., McLean, G., Brooks, J., Wilson, A.: Everyday micro-influencers and their

impact on corporate brand reputation. 21st ICIG Symposium (2019)

4. Cohen, M.D., March, J.G., Olsen, J.P.: A garbage can model of organizational choice, Administrative Science Quarterly 17(1) (1972)

5. Craig, D.: Creator Management in the Social Media Entertainment Industry. In: M. Deuze and M. Prenger. Making Media: Production, Practices, and Professions. Amsterdam University Press (2019)

6. Darley, W.K., Blankson, C., Luethge, D.J.: Toward an integrated framework for online consumer behavior and decision making process: a review, Psychology and Marketing, Vol. 27 No. 2 (2010)

7. Forman, C., Ghose, A., Wiesenfeld, B.: Examining the relationship between reviews and sales: The role of reviewer identity disclosure in electronic markets. Information systems research, 19(3) (2008)

8. Huang, L.T., Farn, C.K.: Effects of virtual communities on purchasing decision-making: The moderating role of information activities. Pacis 2009 Proceedings (2009)

9. Huber G.P., McDaniel R.R.: The decision-making paradigm of organizational design, Management Science 32(5) (1986)

10. Jemielniak D.: Netnografia, czyli etnografia wirtualna–nowa forma badań etnograficznych, Prakseologia, Vol 154 (2013)

11. Jin, S.A., A., Phua, J.: Following Celebrities' Tweets About Brands: The Impact of Twitter-Based Electronic Word-of-Mouth on Consumers' Source Credibility Perception, Buying Intention, and Social Identification With Celebrities. Journal of Advertising, 43(2) (2014)

12. Koay, K.Y., Cheung, M.L., Soh, P.C.H., Teoh, C.W.: Social media influencer marketing: The moderating role of materialism. European Business Review, 34(2) (2022)

13. Kolo, C.: Social media influencers as content creators in the creative economy. Journal of Creative Industries and Cultural Studies: JOCIS, (11) (2024)

14. Komiak, S.Y.X., Benbasat, I.: The effects of personalization and familiarity on trust and adoption of recommendation agents, MIS Quarterly, 30(4) (2006)

15. Kozinets R.V.: Netnography: Redefined, Sage Publication Ltd, London (2015)

16. Lee, F.S., Vogel, D., Limayem, M.: Virtual community informatics: A review and research agenda. Journal of Information Technology Theory and Application, 5(1) (2003)

17. Levin, A.: Influencer Marketing for Brands. Springer Books (2020)

18. Lo, P. S., Dwivedi, Y. K., Wei-Han Tan, G., Ooi, K.-B., Cheng-Xi Aw, E., Metri, B.: Why do consumers buy impulsively during live streaming? A deep learning-based dual-stage SEM-ANN analysis (Open Access), Journal of Business Research, 147 (2022)

19. Mohcine, Y., Bakach, H., Ouiddad, S.: Influencer Marketing and Behavioral Outcomes in Social Media: Systematic Literature Review. International Journal of Accounting, Finance, Auditing, Management and Economics, 3(3-1) (2022)

20. Ozuem, W., Willis, M.: Influencer Marketing. In Digital Marketing Strategies for Value Co-creation: Models and Approaches for Online Brand Communities. Palgrave Macmillan (2022)

21. Prasad, S.: Blogging effects across supplier, retailer, and customer. Journal of Marketing Communications, 27(1) (2021)

22. Ridings, C., Gefen, D., Arinze, B.: Psychological barriers: Lurker and poster motivation and behavior in online community, Communications of the Association for Information Systems, 18 (2006)

23. Sadovykh, V., Sundaram, D., Piramuthu S.: Do online social networks support decision-making? Decision Support Systems 70 (2015)

24. Sadovykh, V., Sundaram, D.: Decision making processes in online social networks: A comparative analysis of health and financial online social networks (2017)

25. Simon, H.A.: Theories of decision-making in economics and behavioral science, The American Economic Review 49 (3) (1959)

26. Smith, D., Menon, S., Sivakumar, K.: Online peer and editorial recommendations, trust, and choice in virtual markets, Journal of Interactive Marketing, 19(3) (2005)

27. Trevena, L., Barratt, A.: Integrated decision making: definitions for a new discipline. Patient Education and Counseling, 50 (3) (2003)