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Holistic analysis of social media user behavior in agricultural context: Bibliometric analysis and systematic review

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A B S T R A C T

This research aims to understand how farmers, especially those with limited technological knowledge, utilize social media in their agricultural activities. The study also aims to identify the impact and responses of farmers to the use of social media in their agricultural practices. Additionally, the research discusses a conceptual framework that integrates internal and external factors in understanding social media user behavior. The research methodology employed is a systematic literature review using scientometric analysis. Bibliometric approaches, machine learning, and social network analysis are utilized to achieve research objectives. Data were obtained from the Scopus database, consisting of high-quality articles published between 2011 and 2023.The findings indicate that social media plays a significant role in influencing farmers' responses to the information they receive and their levels of trust, subsequently affecting their willingness to adopt smart agricultural technologies. Furthermore, the research highlights internal and external factors influencing social media user behavior in the agricultural context. The novelty of this research lies in its holistic approach that integrates cognitive and behavioral factors in understanding social media user behavior. Additionally, the study complements previous literature by addressing antecedents, mechanisms, and consequences of social media use by farmers, as well as identifying barriers they face in leveraging social media.

1. Introduction

In recent years, particularly with the advancements in technology and widespread access to the internet, farmers from various backgrounds have begun to adopt social media in various aspects of their agricultural lives. They utilize platforms such as Facebook, Instagram, Twitter, and YouTube to interact with fellow farmers, access agricultural information, promote their farming produce, and engage in broader agricultural networks. Research on the use of social media, such as Facebook, Twitter, and Instagram, often discusses brand engagement among the younger generation, employing the Technology Acceptance Model (TAM) conceptual framework. One complication in applying TAM (Technology Acceptance Model) and ABC (Actual Behavioral Control) theories in social media usage is their differences in approaches and focuses. TAM theory primarily focuses on the intention of technology usage, encompassing elements such as perceived ease of use and perceived usefulness. It is more oriented toward cognitive aspects and an individual's intention to accept or use technology. On the other hand, the ABC concept in the context of social media usage emphasizes individuals' control over their actual behaviours. ABC is more oriented toward factors influencing one's ability to control their actions, including internal and external factors. TAM may only sometimes be capable of explaining the gap between the intention to use social media and the actual behavior of farmers, given the limitations in technological knowledge. TAM's primary focus on intention may fail to account for barriers that

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hinder individuals from translating intention into action, especially if their control is not strong enough. In contrast, ABC includes actual control involving actual behavior and control.

The aim is to understand how farmers, particularly those with limited technological knowledge, utilize social media in their agricultural activities. The readers are introduced to a conceptual framework that integrates cognitive and behavioral aspects in comprehending social media user behavior. The article systematically reviews social media user behavior in the agricultural context. Its objective is to identify the impacts and responses of farmers with limited technological knowledge regarding the use of social media in their agricultural activities. Furthermore, the article discusses a conceptual framework that integrates internal and external factors in understanding social media user behavior. The recent literature review conducted by Dilleen et al., (2023) highlights the significant role of social media in influencing farmers' responses to the information they receive and the extent of their trust levels, thereby influencing their willingness to adopt Smart farming technology shared among their peers. However, the systematic literature review (SLR) presented by us not only addresses issues regarding farmers' trust levels when receiving information through social media but is more complex, involving antecedents, mechanisms, and consequences for farmers, considering all the barriers they face in utilizing social media to acquire information and build external networks.

Research Question 1 (RQ 1): What are the predicted outcomes of social media usage for farmers with limited technological knowledge?

Research Question 2 (RQ 2): What responses are exhibited by farmers with limited technological knowledge regarding the overall behavior of social media usage?

The structure of the paper is as follows. Section 2 discussed the literature review section, followed by the systematic procedure of a scientometric analysis in Section 3. The results, discussion and implications are presented in Sections 4, 5 and 6, respectively.

2. Literature Review

This holistic approach addresses the limitations of more traditional cognitive frameworks in understanding social media user behavior. The approach posits that social media user behavior is a complex process and cannot be fully comprehended solely through cognitive or behavioristic aspects. Therefore, elements from the external environment that influence social media user behavior are also incorporated into this framework. In the context of social media usage, this framework seeks to understand the complexity of social media user behavior in real life, where influences from factors outside the user are significant.

Within this framework, individuals' thoughts, beliefs, attitudes, and intentions are included as internal factors influencing behavior. Meanwhile, factors from the environment or external influences are also considered to understand how the environment affects an individual's behavior. The cognitive perspective aims to comprehend how these cognitive constructs interact and correlate to influence individual actions. In contrast, the behavioristic perspective is based on the measurement of observable behavior, where the environment determines this behavior (Norton, 2003).

Integrating cognitive and behaviorist perspectives to understand decision-making behavior is becoming increasingly intriguing. The holistic ABC model and the theory of planned behavior integrate internal and external factors to understand environmental impacts. This is crucial for explaining the gap between intention and ethical behavior. The development of holistic models becomes essential in the science of behavioral ethics (Bagozzi, 2000; Davies et al., 2002; Norton, 2003). For instance, Stern (2000) presents the holistic conceptual model of Attitude-Behavior-Constraint (ABC) regarding environmentally impactful behavior, proposing that Behavior (B) is a function of Attitude (A) variables (internal) and Constraint (C) factors (external). The discourse and application of this approach are exciting in explaining the gap between intention and ethical behavior in social media use.

2.1 Implementation Intentions Concept

The significance of implementation plans can be observed in the words of Gollwitzer (1999), "As a mental state in which relinquishing conscious control of behavior shifts individuals from behaviors that require effort to those that are effortless, thereby freeing up individual cognitive capacity." The application of this concept is also relevant in the context of social media usage behavior, where the temptation to constantly check social platforms can disrupt productivity. Individuals can more effectively manage their social media usage by forming solid implementation plans.

Several crucial factors influence the effectiveness of implementation plans. Firstly, the level of commitment to the formed implementation plan is essential. The stronger one's commitment to the plan, the greater the likelihood of executing the desired behavior. Secondly, the completeness and specificity of the implementation plan play a role. The more detailed and specific the plan, the easier it is for individuals to follow their set steps (Dholakia et al., 2007).

2.2 Actual Behavioral Control

Actual Behavioral Control (ABC) refers to the extent to which an individual has actual control over the behavior they intend to perform. ABC plays a crucial role in moderating the relationship between intention and behavior. In this conceptual framework, ABC is depicted as a factor that can act as a barrier or supporter in translating ethical purchase intentions into ethical purchasing behavior (Ajzen, 2002; Martindale, 2021). Perceived Behavioral Control (PBC) refers to an individual's perception of their ability to perform a behavior. It includes how much individuals feel they have external control and internal ability to carry out the intended behavior, as stated by Ajzen (2002). Factors such as the sense of control, self-confidence, and perceived ability play a role in PBC. PBC also indirectly impacts behavior, as this perception of control can influence the formation of intentions.

While ABC is a highly conceptual concept and has not been extensively researched empirically, it is crucial to explain the gap between intentions for ethical behavior and actual behavior. ABC reflects the extent to which individuals genuinely have control over the behavior they intend to perform and to what extent this control reflects reality or is merely based on individual perception.

3. Research Methodology

In our study, we conducted a systematic literature review using scientometric analysis. We integrated bibliometric approaches, machine learning, and social network analysis to achieve the research objectives. Fig. 1 illustrates the systematic literature review procedure adapted from Shaharudin et al. (2019). The study began by identifying research objectives to investigate, with limited knowledge, farmers' behaviors in using social media to communicate regarding marketing, environmental sustainability, social networks, economics, and decision-making. A systematic literature review selected databases based on influential and previously reviewed journals. We retrieved documents published and listed in the Scopus database. Documents listed in Scopus originate from over 7,000 global publishers (Elsevier, 2022). Both databases were consistently reviewed and selected to avoid fraudulent publications and integrity issues. Given the limited knowledge of how farmers behave when using social media for communication about marketing, environmental sustainability, social networks, economics, and decision-making, we utilized keywords related to social media and farmers. These keywords align with our research objective to investigate, with limited knowledge, farmers' behaviors in using social media for communication about marketing, environmental sustainability, social networks, economics, and decision-making. Additionally, the literature review indicated a strong association between technology and risk management and assessment. Therefore, we included these keywords in our findings supported by resilience theory. Furthermore, we only selected peer-reviewed English-language articles published from 2011 to 2023. This ensures that only relevant, timely, and high-quality articles are collected. Non-journal articles were excluded from the analysis. Articles published and listed in Scopus represent quality and avoid predatory journals. After removing duplicates from both databases, we identified 167 documents that met the selection criteria. Titles, abstracts, and keywords served as inclusion criteria in the analysis using a bibliometric approach; meanwhile, for the analysis of the Conceptual Framework of Social Media Usage, each article is reviewed using subject areas limited to Business, Management and Accounting filters and citations such as 'Social media' and farmer, 'Instagram' and farmer, 'Facebook' and farmer, we identified 22 documents.

4. Results

4.1 Journals and publications

Table 1 and Fig. 2 demonstrate the summary of the journals and publications.

Table 1
Top 10 journals in social media for farmer research

Rank	Journal	Articles
1	Journal of agricultural extension	24
2	American journal of agricultural economics	18
3	Agricultural economics	15
4	Journal of environmental management	12
5	Agronomy for sustainable development	11
6	International journal of lifelong education	11
7	Journal of agriculture, food systems, and community development	10
8	Global environmental change	9
9	Computers and electronics in agriculture	7
10	Journal of rural studies	7

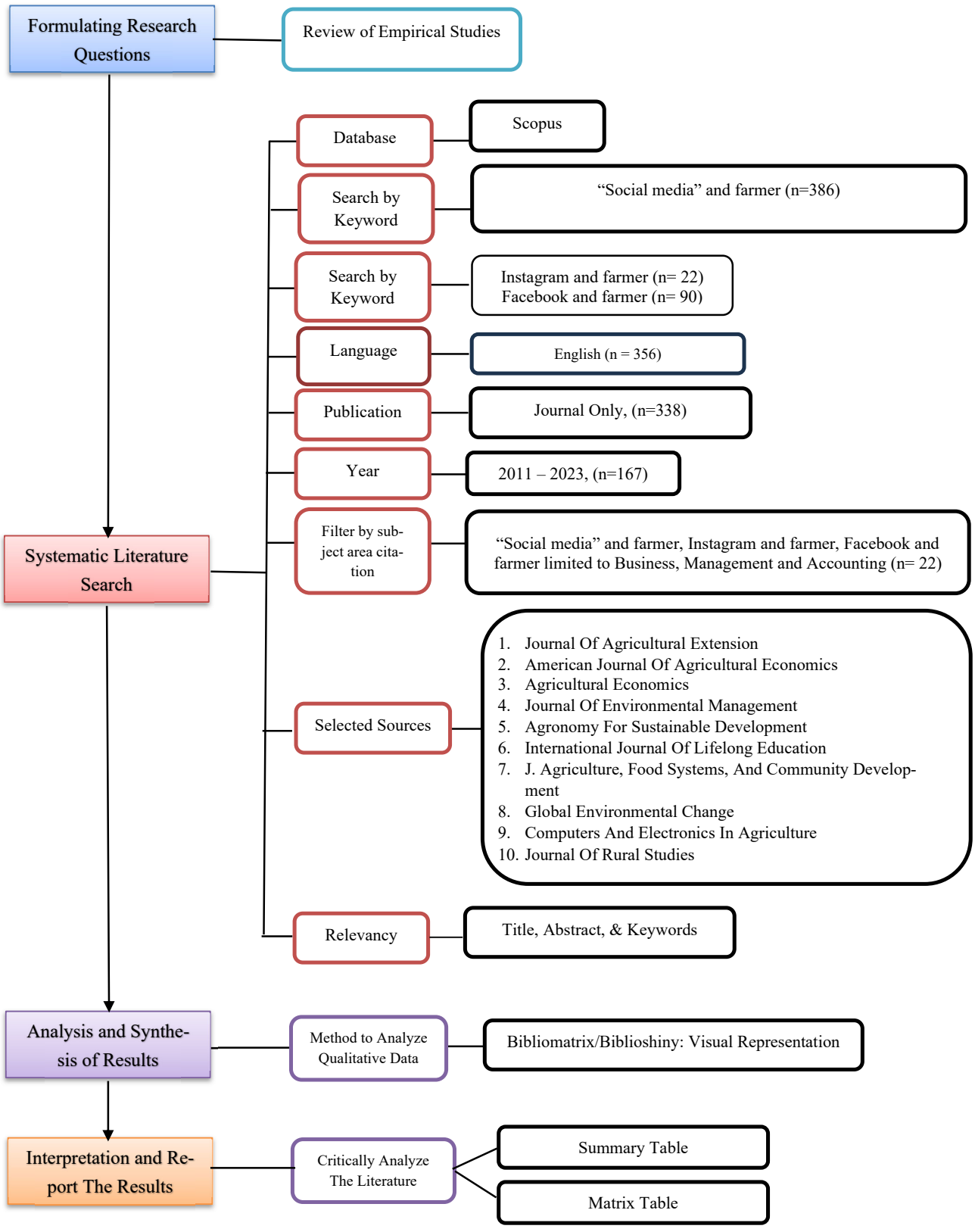

Fig. 1. The systematic literature review procedure

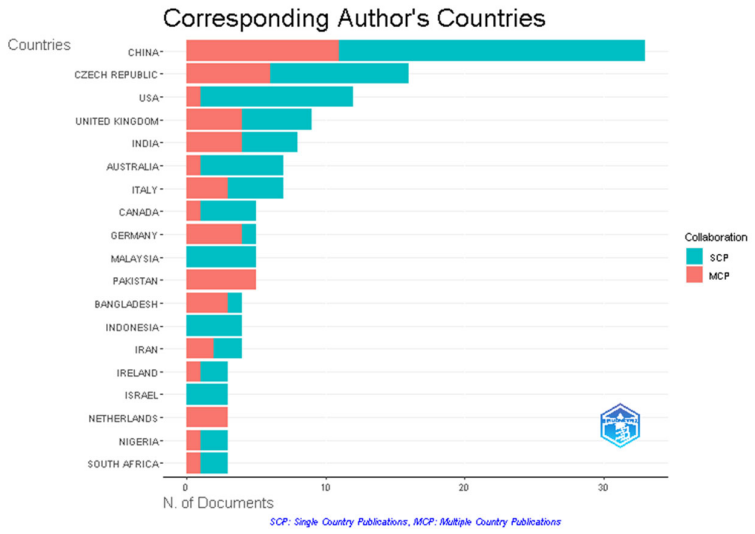

Fig. 2. Research Correspondence on Social Media Usage among Farmers in Multiple Countries

As depicted in Fig. 2, the top 19 contributing countries in publications on the selected topic are highlighted. Most articles are authored primarily from China (19%) with 33 articles, followed by the Czech Republic (9%) with 16 articles, the USA (7%) with 12 articles, and the United Kingdom (9%), India (6%), Australia, Malaysia, Spain, and the rest contributing 2% each. We also reviewed the relevant Statista database (2022) to examine the corresponding levels of social media usage in the mentioned countries. It was observed that the top contributing countries indeed rank among the nations with the highest social media usage rates in the past 14 years. Table 1 illustrates the top 10 journals, totaling 124 articles, that are most relevant in publishing research on social media usage in rural communities. These journals include the Journal of Agricultural Extension, American Journal of Agricultural Economics, Agricultural Economics, Journal of Environmental Management, Agronomy for Sustainable Development, International Journal of Lifelong Education, Journal of Agriculture, Food Systems, and Community Development, Global Environmental Change, Computers and Electronics in Agriculture, and Journal of Rural Studies. The publications span from 2011 to 2023, with the top three highest in the publication being the Journal of Agricultural Extension, publishing 27 articles, followed by the American Journal of Agricultural Economics with 18 articles, and Agricultural Economics with 15 articles.

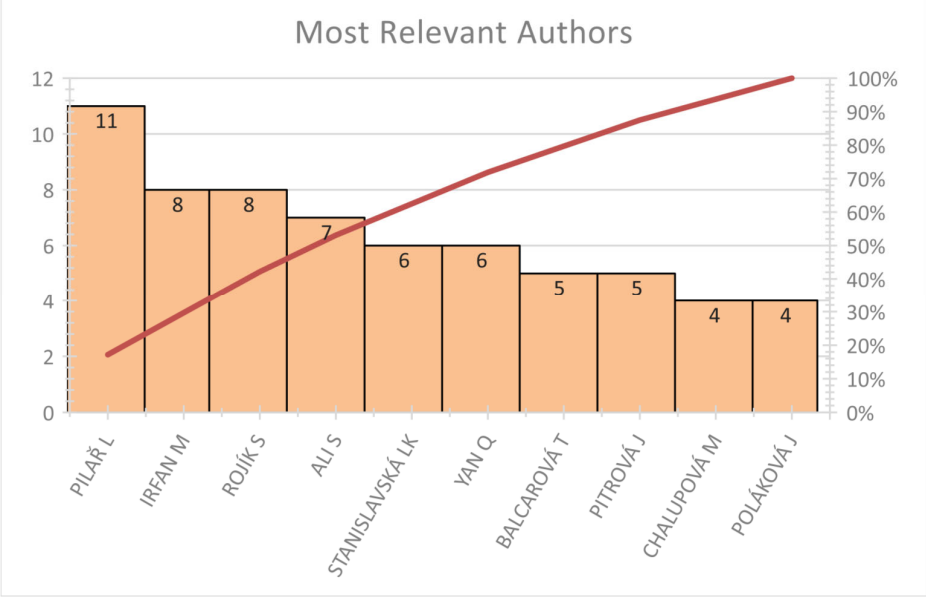

Fig. 3. Top Ten Authors on the Topic of Social Media Usage among Farmers

4.2 Intellectual Structure Maps

Fig. 3 and Fig. 4 illustrate the intellectual structure map, showcasing the ten authors who primarily focus on social media usage in rural communities. Ranking third highest is Pilař et al. (2018), with a research focus on social networks, Instagram, and farmer markets. This author's references highlight publications on education and business through Instagram posts and customer experience. Rojík et al. (2022), focuses on social media analysis, particularly Instagram, with the majority of references from Cohen, (1988) regarding behavior analysis. Irfan conducts research on renewable energy and farmer markets, with primary references on behavior analysis, Cohen, (1988), influencing factors of biogas technology, Wang et al. (2020), digital food influencers, and (Goodman, 2004). Fig. 4 shows that research focusing on social media usage in rural communities is most favored on the Instagram and Facebook platforms. This indicates that these two applications have user-friendly interfaces, as Instagram and Facebook offer relatively intuitive and easy-to-use interfaces. Rural communities with varying levels of technological literacy may find these platforms more accessible and understandable. The visualization of content is another aspect emphasized in Figure 4. Instagram and Facebook offer features that enable users to share images and videos easily. For rural communities with strong visual skills and a desire to share their moments or work results visually, Instagram and Facebook become appealing choices. Lastly, these platforms are practical communication tools for agricultural content and marketing. Instagram and Facebook provide ample space to promote and share agricultural content. For rural communities involved in farming or related industries, these platforms can be essential tools for building brands, marketing products, and sharing agricultural knowledge (Gever et al., 2023).

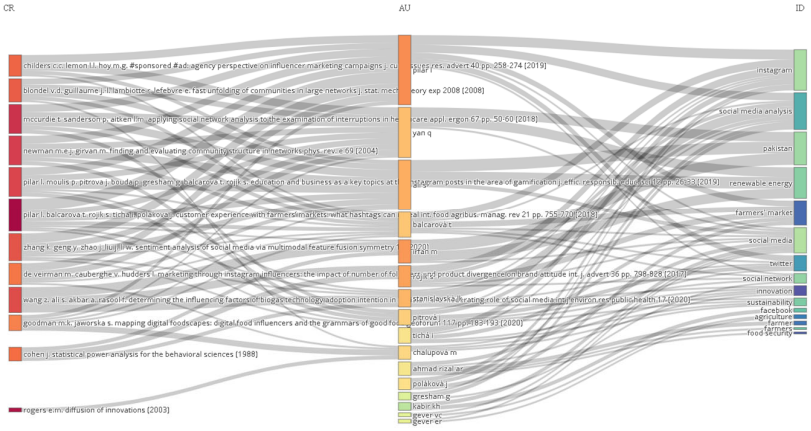

Fig. 4. Intellectual Structure Map on the Usage of Social Media by Farmers

Table 2
The antecedents of farmers using social media

Antecedent	Indicators
Perceived Ease of Use: (Casaló et al., 2010; Curran & Lennon, 2011; Dumpit & Fernandez, 2017; El-Haddadeh et al., 2012; Lin & Kim, 2016; Rauniar et al., 2014; Wamba et al., 2017).	1. New media accessibility: (Das & Pradip, 2021). 2. New media usability: (Das & Pradip, 2021). 3. Multimedia Facilities and Easy Access Through Mobile Phones: (Faxon, 2023).
Social Networking: (Curran & Lennon, 2011)	1. Collaboration and networking among farmers: (Dangi & Narula, 2020) 2. Supply chain: (Asogwa et al., 2023). 3. Social network or interpersonal connections
Peer Communication & Relationship (Bianchi & Andrews, 2018; Paris et al., 2010)	1. Food marketing (Personality traits, Human values, Cognition, Emotions, Perception) 2. Speed of Communication: (Sisson & Bowen, 2017). 3. Product promotion: (Dowin Kennedy et al., 2023). 4. Dialog and Strategic Communication: (Sisson & Bowen, 2017) 5. Promoting Land Consolidation: (Gessesse et al., 2018). 6. Promoting Sustainable Agribusinesses: (Shiri, 2021). 1. CSR: (Wilburn & Wilburn, 2015). 2. marketing tool for farmers and vendors to engage with consumers: (Pilař et al., 2016) 3. Building Engagement: (Sisson & Bowen, 2017). 4. Online interaction propensity: (Odoom et al., 2017).
Capabilities	1. Knowledge and discovery of diseases: (Mansour, 2023). 2. Acquisition of skills: (Mansour, 2023). 3. Sharing skills and production knowledge.:(Dangi & Narula, 2020) 4. Income level: (Gever et al., 2023). 5. Knowledge of fairtrade: Zachary & Hong Yu (2021) 6. Business Skills: Gever (2023). 7. In virtual communities, people create, share, or exchange information and ideas: (Stevens et al., 2016). 8. to explore social, cultural, and environmental issues: (Pilař et al., 2018) 9. enables knowledge transfer: (Dilleen et al., 2023).

4.3 Conceptual Framework: Social Media Usage from the ABC Theory Perspective

The authors propose a framework concerning the antecedents, mechanisms, and consequences of social media usage among farmers, considering the obstacles they face. This detailed literature review model primarily focuses on the ethical aspects of social media usage behavior. Our conceptual model assumes that contextual elements can help explain the gap between the intention to use social media and the actual behavior of social media usage. Therefore, these elements are integrated into the cognitive framework of intention-behavior to develop a holistic conceptual model of ethical social media usage behavior, specifically focusing on how usage intentions are translated into actual usage behavior. The proposed conceptual model addresses the main shortcomings of the attitude-intention-behavior framework identified earlier by exploring the mediating effects of implementation intentions and integrating the moderating effects of ABC and SC.

Table 3
Mechanisms of Farmers Using Social Media

Author	Implementation Intention	Actual Behavioral Control	Situational Context	Explanation
(Robichaud & Yu, 2022)	Psychological and cognitive aspects: 1. Attitude towards purchasing fairtrade (Product Interest) 2. Attitude towards purchasing fairtrade (Product Likeability) 3. Attitude towards purchasing fairtrade (Price Acceptability	n/a	n/a	Measuring these attitudes is more related to psychological and cognitive aspects, i.e., how individuals feel about Fairtrade products regarding interest, preferences, and price acceptance.
(Fatemi et al., 2023)	n/a	Frequency of tweets	n/a	reflects the extent to which farmers have control over their social media behavior, especially regarding how often they can engage in tweeting. Stable internet access and available time can influence actual behavioral control.
(Gessesse et al., 2018)	Awareness land consolidation (LC)	Perception land consolidation	n/a	reflects the intention or awareness of farmers to engage in the land consolidation process and the extent to which farmers have control over their perceptions of the land consolidation process.
	n/a	n/a	Publicity:	Related to the extent to which fairtrade products are known and discussed in the social environment
	n/a	n/a	Task Definition: Attitude about sustainability	Related to the understanding and attitudes toward the sustainability of Fairtrade products, thus can be linked to the Task Definition in the context of sustainable purchasing decisions.
(Asogwa et al., 2023)	n/a	Internet Based platforms	n/a	on the physical ability and technical skills farmers possess to access, participate, and operate on internet-based platforms, such as social media, websites, online forums, or specialized agricultural apps accessible through the internet.
(Dilleen et al., 2023)	n/a	Trust in Social Media Content	n/a	The level of trust can influence actual behaviour, such as sharing or responding to social media content.
	n/a	Information Search, Sense Making, and Networking	n/a	The ability to search for information, make sense of data, and build networks can influence actual behavior.
	n/a	Digital Communication Channels	n/a	The ability to use digital communication channels affects actual behavior, such as communicating with stakeholders.
	Actor Engagement	n/a	n/a	This includes actions planned by farmers or stakeholders in interacting with social media, such as participating in groups or collaborating with stakeholders.
(Mansour, 2023)	Awareness of ICT (Information and Communication Technology)	Farmers' access to Information and Communication Technology (ICT) resources.	n/a	These mechanisms are related to farmers' actual control level and implementation intentions regarding their access to Information and Communication Technology (ICT).
(Das & Pradip, 2021)	Adoption of new media technologies:	n/a	n/a	This mechanism is related to Actual Behavioral Control in adopting social media technology owned by farmers toward adopting new technology.

Table 3
Mechanisms of Farmers Using Social Media (Continued)

Author	Implementation Intention	Actual Behavioral Control	Situational Context	Explanation
(Dangi & Narula, 2020)	n/a	n/a	Sharing market space; Sharing knowledge and skills online (social media)	Implementation Intentions dan Situational Context (Social Surroundings)
(Shiri, 2021)	Attitude about Organic Agribusiness	n/a	n/a	This mechanism reflects farmers' attitudes toward organic farming businesses. These attitudes can influence farmers' intentions to adopt or participate in organic farming through social media.
(Wang et al., 2020)	Personal Norms	n/a	n/a	Farmers' ability to control their behavior in compliance with their norms, including the use of social media.
(Laurett et al., 2021)	Perception of sustainability	Development in agriculture	n/a	1. Farmers integrate the concept of sustainability into their activities on social media. 1. Farmers' ability to control their behavior in keeping up with agricultural developments, accessing information, and interacting through social media.
(Stevens et al., 2016)	n/a	n/a	Physical Surroundings: help in the application of knowledge."	The physical context, such as the availability of technological devices, internet connectivity, and digital infrastructure in agricultural areas, can influence farmers' use of social media to apply knowledge.
(Zhang et al., 2021)	Low-cost social media tools for marketing Influencers help despite lacking expertise	n/a	Situational Context: Peer and company information reduces uncertainty	1. Farmers can control how they use affordable social media tools for agricultural marketing. 2. This falls under Actual Behavioral Control, as it involves controlling how farmers leverage the influence of influencers in promoting agricultural products or services. 3. It involves how information from social media helps farmers reduce uncertainty in decision-making.
(Pilař et al., 2018)	Hashtags	n/a	Interconnected communities show complex attitudes	1. Using hashtags is an actual action that social media users can control to enhance visibility. 2. Interconnected communities demonstrate how connected communities in a specific context can express complex attitudes toward certain topics or issues.
(Faxon, 2023)	Sharing knowledge within groups and Facebook pages	Accessing market information.	Expressing criticism towards the agricultural structure	1. Reflects the intention or desire of social media users to share knowledge within a group or Facebook page. 2. Social media users can express criticism of the agricultural structure in a specific context. 3. Social media users can access market information.
(Garner, 2022)	Posting Images and Videos Education-Based Content	Comments and Support	Openness about Challenges and Vulnerabilities:	1. Intention or desire of social media users to post images. 2. Intention or desire of social media users to share or access educational content. 3. Encompassing tangible actions (i.e., providing comments and support) that can be controlled by social media users. 4. They reflect how social media users are open to challenges and vulnerabilities in a specific context.

5. Discussion

5.1 Antecedent

Fig. 5 reveals diverse research highlighting farmers' social media usage antecedents. These studies encompass various aspects influencing how farmers use social media in the context of agriculture. Most research emphasizes factors triggering or determining farmers' social media usage, such as knowledge, attitudes, environmental motivation, and practical needs. Robichaud and Yu, (2022) research underscores the importance of farmers' knowledge and attitudes towards specific topics, such as fair trade. They highlight that knowledge of fair trade can influence farmers' attitudes toward using social media to support fair trade principles. Additionally, research by Fatemi et al. (2023) covers aspects like food marketing, food availability, and food policy. They state that farmers' perceptions of these factors can influence how they use social media in the agricultural context. Several other studies highlight environmental and social factors, such as farmers' efforts to promote the environment, as seen in the study by Gauthier et al., (2019); Gessesse et al., (2018); Stevens et al., (2016). They emphasize that farmers in land

consolidation can use social media to promote environmental goals and share information about sustainable practices. Additionally, factors such as trust, ethics, communication speed, and social interaction are also a focus in some studies, as shown in the research by Sisson & Bowen, (2017). They conclude that message credibility on social media and engagement in dialogue with the audience are crucial factors influencing farmers' behavior through social media.

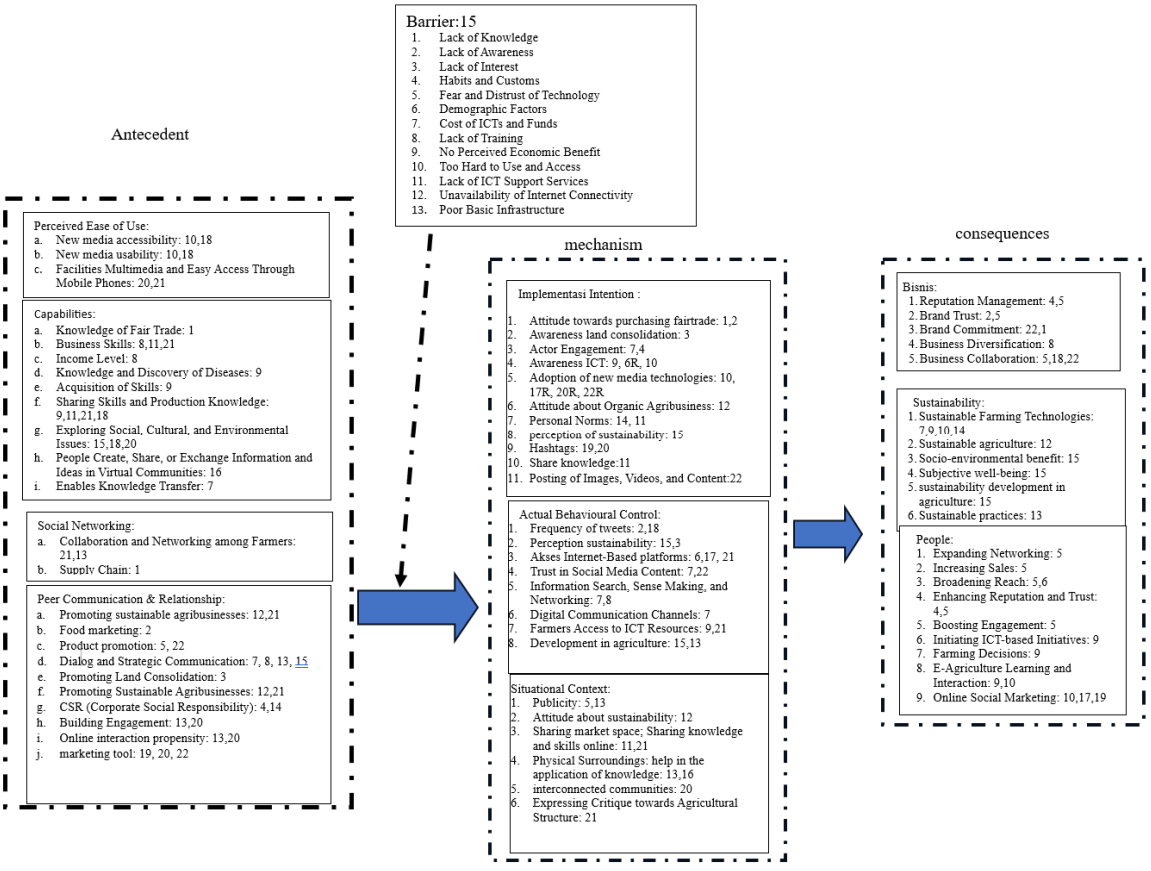

Fig. 5. Process Flow of Social Media Usage by Farmers (based on Tables 2 and 3)

Another significant aspect in the topic of farmers' social media usage, as revealed in the study by Sisson & Bowen, (2017), considers “Credibility and Salience”, “Ethical Considerations”, “Speed of Communication”, “Listening and Monitoring”, “Building Engagement”, and “Dialog and Strategic Communication”. They conclude that message credibility on social media and engagement in dialogue with the audience are crucial factors influencing farmers' behavior through social media. Meanwhile, Gever et al., (2023) include factors such as “Business skills” and “Income level” in the context of farmers' social media usage. The influence of "Business Skills" in farmers' social media usage can reflect the importance of their business capabilities in leveraging social media for purposes like farm product promotion, sales, and marketing. This factor may refer to the extent to which farmers have knowledge and skills in managing their business aspects through social media platforms. Income level indicates that farmers' income can affect the resources they allocate to participate in social media. Farmers with higher incomes can invest time and resources in social media usage for agricultural purposes and communication within the farming community.

5.2 Mechanisms

Implementation intention in this context can be considered an mechanisms factor influencing or motivating farmers to use social media. Farmers have specific intentions, awareness, and attitudes related to the use of social media in their agricultural activities. Implementation intention reflects how they carry out their intentions and attitudes in actual actions using social media as a tool or platform to interact, share information, or make decisions related to agriculture. According to Robichaud and Yu (2022), implementation Intention can be seen in how farmers translate their attitudes toward purchasing fairtrade products, including interest, preference, and price acceptance, into actual purchasing behavior. Suppose they have a solid intention to support Fairtrade. In that case, they may be more inclined to buy these products, illustrating the relationship between attitude and behavior, which is the core of Implementation Intention. Asogwa et al. (2023) in their study explains how the physical and technical capabilities of farmers in using internet-based platforms to participate in agriculture through

social media. Suppose farmers have the intention to engage in these internet-based platforms. In that case, they must translate that intention into practical actions, such as accessing, participating, and operating on these platforms.

In their study, Das and Pradip, (2021) explain how farmers translate their intentions to adopt new social media technology into actual actions. If they have a solid intention to adopt this technology, they need to implement learning and use actions of this technology. Dangi & Narula, (2020) study explain how farmers translate their intentions to share their knowledge and skills on social media into actual actions of sharing that knowledge and skills in the online market space. The intention to share knowledge then needs to be realized through visible sharing actions on social media.

The authors have identified various Mechanisms that drive farmers to use social media. For example, in the study by Robichaud and Yu, (2022), knowledge about fair trade and general attitudes toward fair trade influences farmers' interest in purchasing fair trade coffee. The mechanism focuses on positive attitudes toward fair trade coffee, including interest in the product, preference for the product, price acceptability, and convenience. In the study by Gessesse et al., (2018), farmers make efforts to promote the environment and land consolidation (LC). The mechanism used is awareness and perception of LC, which drives farmers' actions to support this initiative.

In the research by Sisson and Bowen, (2017), factors such as credibility, ethical considerations, communication speed, listening, engagement building, and strategic communication play a crucial role in interacting with farmers through social media. The mechanisms used include sincerity, organizational response, honesty, transparency, and corporate social responsibility (CSR) policies that enhance transparency, connect with stakeholders, awareness campaigns, monitor and respond to issues, measure sustainability initiatives, enhance accountability, and address conventional challenges. Through these various mechanisms, farmers can participate in various activities related to the environment, fair trade, and other social initiatives through social media. These mechanisms help them communicate, collaborate, and influence positive changes in their farming practices and in the broader community.

In the study conducted by Dilleen et al. (2023), they highlight the critical role of networks. In this context, farmers use mechanisms such as actor engagement, trust in the network, digital communication channels, information search, understanding creation, and social media networks to meet their needs and achieve their goals. The actor engagement mechanism reflects that farmers actively engage in agricultural networks and communicate with actors related to farming practices. Trust in the network is essential for maintaining positive and collaborative relationships with relevant parties. Meanwhile, digital communication channels give farmers access to the information they need and allow them to communicate more efficiently. Information search and understanding creation reflect how farmers use social media to seek information about farming practices, technology, and current trends.

In study Sisson and Bowen, (2017), the emphasis is on various aspects that influence farmers in social media. They identify several mechanisms that play a crucial role in farmers' interaction with social media and how this interaction influences their behavior. Firstly, this research highlights the importance of credibility and content relevance (Salience) in influencing farmers. Farmers tend to be more responsive to content they perceive as credible and relevant to their needs and interests in agriculture. This affects their choices in following, interacting, and utilizing content from various social media sources. Furthermore ethical aspects play a significant role in the relationship between farmers and social media. Farmers pay attention to how information is conveyed and whether it aligns with agricultural ethics. Moreover, actor engagement building (Wilburn & Wilburn, 2015; Dilleen et al., 2023). is a vital mechanism in maintaining sustainable relationships between farmers and social media. By actively engaging in various aspects of social media communities relevant to agriculture, farmers can optimize the benefits of these platforms. Lastly, dialogue and strategic communication with social media is crucial.

The situational context in farmers' use of social media plays a significant role in the ABC theory framework. In this theory, “A” represents psychological and cognitive aspects, “B” is Implementation Intention, and “C” involves Actual Behavioral Control. Situational Context relates to factors beyond individual control that can affect intentions and actual behavioral control. Some studies support the connection between situational context and the ABC theory in the context of farmers. Stable internet access and time availability, as found in the study by Gessesse et al., (2018), affect farmers' actual behavioral control in social media. These situational factors also include farmers' awareness of processes such as land consolidation and their perceptions of it, which can influence their intentions to engage in such activities through social media, as in the study by Asogwa et al., (2023).

Additionally, situational factors such as the level of trust in social media content, the ability to seek information, build networks, and access technological devices also influence intentions and actual behavioral control, as found in the studies by Dilleen et al., (2023) and Zhang et al., (2021). The situational context of farmers' use of social media contributes to how they plan and control their behavior, following the principles of the ABC theory. Other research, such as that conducted by Laurett et al., (2021) and Das & Pradip, (2021), also identifies how situational context influences farmers' intentions and actual behavioral control in social media. All these studies reflect the relationship between situational factors and the ABC theory framework in the context of farmers' use of social media.

5.3 Consequences

The use of social media by farmers has various consequences that can impact various aspects of the agricultural world. By leveraging social media, farmers can enhance their awareness of the latest agricultural technology developments, more efficient cultivation practices, and environmental and sustainability issues. This is reflected in research stating that farmers can access knowledge about Fair Trade and general attitudes toward it (Zachary et al., 2021). Additionally, social media enables farmers to participate in a broader agricultural community and share information with fellow farmers, researchers, and other stakeholders, which can strengthen their engagement (Dilleen et al., 2023; Zachary et al., 2021).

Furthermore, social media can enhance farmers' reputations and public trust. By sharing information about good farming practices and sustainability issues, farmers can build a positive reputation among stakeholders, such as business partners and consumers (Zachary et al., 2021). Social media also provides opportunities for farmers to promote their agricultural products, which can increase sales and reach a broader market (Dowin Kennedy et al., 2023; Zachary et al., 2021).

In the study by Faxon, (2023), it is stated that the development of communication technology has led to the “Redefinition of Agritech”. This refers to the idea that digital technology, especially social media, has allowed farmers and agricultural actors to use technology in ways unintended or not initially designed for agriculture. This includes using social media for broader purposes in an agrarian context. For example, social media, originally designed for social interaction and information sharing on platforms like Facebook, can be adapted by farmers and agricultural actors to communicate with each other, share information about market prices and best farming practices, or even voice criticism of conventional farming practices.

The use of social media also enables business collaboration between farmers and other stakeholders in the agricultural supply chain (Dowin Kennedy et al., 2023). This can lead to new business opportunities and enhance agricultural sustainability. Additionally, social media helps raise awareness of environmental and sustainability issues in agriculture, representing a positive step toward environmentally friendly farming practices (Zachary et al., 2021). Despite the numerous benefits of using social media, it is essential to remember that it also carries potential risks, such as spreading false information and hostile debates. Therefore, farmers must use it wisely and cautiously, continually updating their knowledge of the benefits and risks associated with social media in the agricultural context.

Several reviews relevant to the Actual Behavioral Control (ABC) theory in the context of social media use by farmers are discussed. One such study was conducted by Fatemi et al., (2023), which measures the "Frequency of tweets" as a representation of the ABC factor. The results of this study indicate that factors such as stable internet access and availability of time influence farmers' physical control and behavior in actively participating in social media. This emphasizes the significance of physical control aspects in farmers' use of social media. Furthermore, in the study by Asogwa et al., (2023), farmers' physical and technical control in operating internet-based platforms is strongly emphasized. This research highlights the importance of farmers' ability to control their behavior in participating and operating on internet-based platforms, an ABC element influencing farmers' decisions in utilizing social media in the agricultural context. Additionally, the study by Zhang et al., (2021) shows that farmers have control over how they use affordable social media tools for agricultural marketing. This reflects the ABC factor related to farmers' behavior control using social media tools to achieve their marketing goals. Pilař et al., (2018) also discusses the physical and behavioral control that social media users can exert, such as hashtags and how connected communities can influence user behavior in expressing attitudes toward specific topics. Additionally, in Faxon, (2023) study, farmers' physical and technical control in sharing knowledge within groups or Facebook pages also indicate ABC elements that can influence farmers' decisions in actively participating in social media. Overall, the findings from these five studies emphasize the importance of ABC elements in understanding how farmers control their behaviour in the use of social media in the agricultural context.

6. Conclusion

Within the ABC theory framework, cognitive and behavioristic perspectives are integrated through the holistic ABC model and the theory of planned action, proving key to understanding the gap between ethical intentions and behavior, especially in the context of social media use (Bagozzi, 2000; Davies et al., 2002; Norton, 2003; Stern, 2000). This model emphasizes that behavior (B) is influenced by internal attitude variables (A) and external constraint factors (C), providing a comprehensive overview of human behavior dynamics (Stern, 2000). The concept of implementation intentions can be applied to social media use. Gollwitzer, (1999) highlights the importance of clear implementation plans to realize intentions, such as reducing social media usage to increase productivity. When specific and executed with a high level of commitment, these plans can help individuals manage temptations and change behavior (Dholakia et al., 2007). Actual Behavioral Control (ABC) becomes crucial in moderating the relationship between intention and behavior, especially in ethical purchasing (Ajzen, 2002; Martindale, 2021). ABC reflects how individuals have absolute control over their intended behavior. Perceived Behavioral Control (PBC) plays a role in influencing intention formation and its impact on behavior (Ajzen, 2002). Although still conceptual, ABC provides essential insights into explaining the gap between ethical behavioral intentions and actual behavior.

6.1 Practical and Theoretical Implications

Although it focuses on the application of scientometrics and explores academic research on the use of social media in agriculture discussed through the ABC theory, this article also has practical relevance. Practitioners can benefit from the current research findings in various ways. For example, they can enhance their knowledge of social media research topics. Thus, they can implement emerging value-creation initiatives suggested by academics. As outlined in Figure 7, they can gain insights into behavior in social use for marketing initiatives, communication, learning, social networking farming, and promoting sustainability. Although the academic community has conducted substantial research on social media in recent years, there is a need for practical action. In general, our research results indicate that the influence of social media needs to be further explored worldwide. Our SLR findings must be considered by policymakers, research centers, and institutions studying the impact of social media. Business managers can benefit from this research to better understand the behavioral intentions of customers, especially farmers, considering that social media is often optimized for self-presentation (Kim & Kim, 2019).

Regarding theoretical implications, the first is related to the integration of Behavioral Psychology Theory: Enriching the ABC theory with elements from behavioral psychology, such as the theory of planned behavior, can provide further insights into how attitudes, subjective norms, and behavioral control influence farmers' decisions in using social media. The integration of these theories can help in a deeper understanding of the psychological factors underlying the intentions and behaviors of farmers. The second is multi-stakeholder engagement. Involving different parties, such as government, agricultural institutions, and technology companies, in developing the ABC theory can enrich an understanding of how cross-sector collaboration can affect farmers' behavioral control in adopting social media.

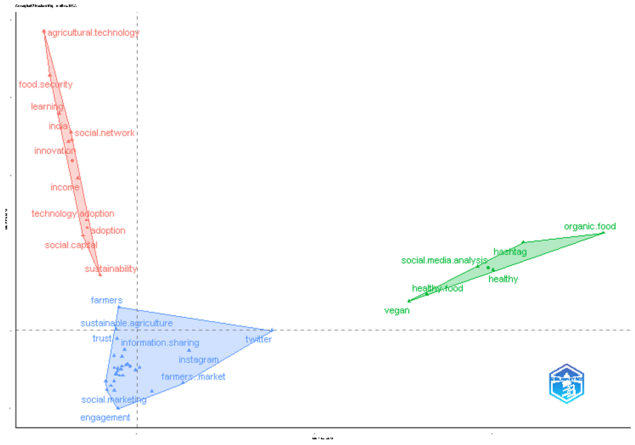

Fig. 6. Conceptual structure

Fig. 6 on the conceptual structure provides an understanding of the three groups. The first blue-colored group with a broader research scope in clustering shows a positive attitude toward social media use, adoption of agricultural technology, and sustainable values. This aligns with behavioral theories emphasizing that a positive attitude toward values or goals can motivate supporting behavior (Ajzen & Madden, 1986). Thus, clustering results reflect the complexity of internal and external factors shaping farmers' behavior in the context of social media use. Farmers in this group show a positive attitude toward social media use, such as “social.media”, “Instagram”, “facebook”, and “twitter” (Ajzen, 1991). This positive attitude can influence their behavior in actively participating in learning and marketing activities on these platforms. In the ABC theory framework, attitude towards social media becomes a determinant of social media usage behavior (Stern, 2000). The second red-colored Group 2 shows research focused on how farmers in this group exhibit an open attitude toward the adoption of technology and innovation in agriculture, as reflected in keywords such as “technology adoption”, “innovation”, and “agricultural technology”. Trust in technology influences technology adoption behavior in agriculture, in line with behavioral theories identifying trust as a predictor of behavior (Ajzen & Fishbein, 1975). Group 3, highlighted in green, showcases research focusing on how farmers in this group highlight their attitudes toward sustainable agriculture, food security, and social media use. Positive attitudes toward “sustainability”, “food security”, “healthy”, “organic food”, and “vegan” reflect these values. Social media use, indicated by “social media analysis” and “hashtags”, may be part of farmers' behavior to promote these values through digital platforms. Behavioral theory suggests that a positive attitude toward a value or goal can motivate behavior supporting that value or goal (Ajzen & Madden, 1986). In the ABC context, the connection between the attitude and behavior of farmers is reflected in the holistic conceptual model Attitude–Behavior Constraint (Stern, 2000).

6.2 Future research

Based on Fig. 7 and Table 2, the topic of media role, social networks, and the farming system falls into the declining themes quadrant, indicating low relevance and development degrees. This suggests a decreasing interest in or attention to the topic, with limited current literature or research development. Similarly, the topic of biodiversity cloud platform costs is also in the

declining themes quadrant. On the other hand, "learning" is positioned in the niche themes quadrant. This suggests that while the topic has significant development or research, it may not be a primary focus or widely popular in academic literature. Although these topics may need more attention, the ongoing increase in attention and development could indicate future relevance. This is reflected in studies like Phillips et al., (2018), which emphasize the future research potential related to the utilization of social media for agriculture marketing, production, and sustainability. They highlight how social media can influence agricultural policies and innovative learning. Chivers et al., (2023) also provide future research prospects related to the trade-off of using video and podcasts and farmers' responses to digital extension. They explore challenges and opportunities in delivering information through digital media. Similarly, Cui, (2014), in his study, suggests future research directions regarding the use of farmer markets on Facebook to track visits and fan demographics for marketing strategy. Sutherland & Labarthe, (2022) also underscore the importance of understanding how digital transitions affect knowledge acquisition and accessibility. Another aspect worth examining is the influence of social media in enhancing farmers' trust in the information they receive.

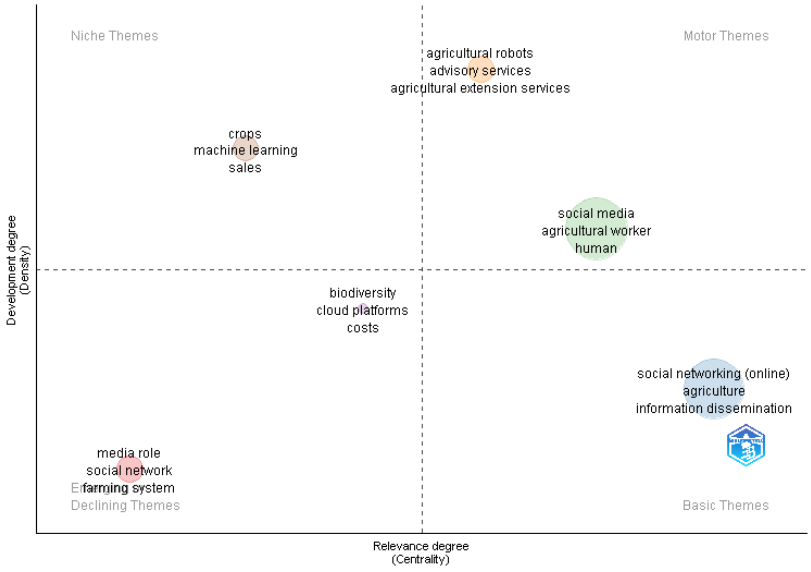

Fig. 7. Thematic map of research in social media

Table 4: Future Research

Author	Future reset
(Materia et al., 2015) (Cui, 2014)	Further research is needed to understand the impact of learning interactions through social media. Further research is needed on using farmer's market pages on Facebook to track visits and fan demographics to formulate marketing strategies.
(Cundill & Rodela, 2012)	The influence of these contextual factors on the learning outcomes of deliberation has yet to receive adequate attention in natural resource management and should be the focus of future research.
(Gwandu et al., 2014)	Enhancing interactive approaches and building the capacities of farmers and extension officers to improve the utilization of learning platforms.
(Minet et al., 2017) (Filippini et al., 2020)	Future studies could explore the potential use of crowdsourcing in agriculture Research development can investigate the factors that drive the formation of farmer networks and the constraints that hinder their establishment
(Murendo et al., 2018)	Future studies can enhance the analysis by incorporating social network structures, such as differences in wealth, age, and distances among network members, into the households being interviewed. Factors influencing adoption, such as perceptions of consumer protection, fraud, and security related to mobile money, should be considered
(Lee & Suzuki, 2020).	Future studies can explore dependence and psychological variables in the motivation to share information in virtual communities
(Phillips et al., 2018).	This research focuses on how social media can address marketing, production, and sustainability issues in agriculture. It can also explore how the use of social media can influence the formation of sustainable agricultural policies and promote innovative learning in the agricultural context
(Munthali et al., 2021).	Investigate the contribution of social media platforms to face-to-face discussions, explore the combination of online and offline communication, and focus on group and individual communication
(Kabir et al., 2022). (Chivers et al., 2023)	Future research should explore the factors of ICT usage and the distinctive culture of Bangladesh Further research is needed to explore the trade-offs of using video and podcasts in different contexts and to determine which farmers respond well or poorly to various forms of digital extension due to access, skills, and infrastructure issues
(Prost et al., 2022)	More focus is needed on how social media can be more effective in assisting farmers in transitioning towards more sustainable agriculture, especially for small and medium-sized farmers.

Research can be conducted to explore the extent to which the use of social media can impact farmers' trust levels in the information obtained through these platforms. This study may analyze how interactions with fellow farmers and the technological resources available on social media affect farmers' perception of trust. By understanding the factors influencing farmers' trust in the information they receive through social media, steps can be taken to improve the quality of information

conveyed and strengthen farmers' trust in the platform. The impact of limited technological knowledge on farmers' usage behavior of social media is worth investigating further. Research can be conducted to understand how technological knowledge limitations influence farmers' behavior in using social media. This study may involve identifying inhibiting factors that may arise, such as accessibility, technological skills, and limited infrastructure, and exploring how these factors can be overcome or improved to encourage broader adoption of social media by farmers. By understanding these barriers, strategic steps can be taken to enhance farmers' access and technological knowledge, enabling them to optimize the benefits offered by social media.

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Appendix

No.	Author	Title	Antecedent	mechanism	Consequences	Cita-tion	Country
1	Zachary Robichau & Hong Yu (2021)	Do young consumer scare about ethical consumption? Modelling Gen Z purchase intention towards fair trade coffee	1. Knowledge of fairtrade: Barnes and Vidgen(2002), Hanand Stoel(2017) 2. General attitudes towards fair-trade: Dickson (1999),Bensonand Connell (2014)	De Pelsmacker and Janssens(2007): 1. Attitude towards purchasing fair-trade coffee (Product Interest) 2. Attitude towards purchasing fair-trade coffee (Product Likeability) 3. Attitude towards purchasing fair-trade coffee Attitude towards purchasing fair-trade coffee (Price Acceptability) 4. Attitude towards purchasing fair-trade coffee Price Acceptability (Convenience)	Purchase Intentions Ajzen and Fishbe in (1980), Al-Swidi et al. (2014)	31	Unknown
2	Fatemi, H., Kao, E., Schillo, R. S., Li, W., Du, P., Jian-Yun, N., & Dube, L. (2023)	Using social media to analyze consumers' attitude toward natural food products.	1. Food marketing (Personality traits Human values, Cognition, Emotions, Perception 2. Food availability (Consumer preference, Food innovation, Sustainability)	1. Frequency of tweets	1. Attitude towards 2. trust.	0	Unknown

	10-1108_BFJ-06-2022-0511		3. Food policy (Market trend) Food socialization (Social construct)				
3	Gessesse, A. T., Li, H., He, G., & Berhe, A. A. (2018).	Study on farmers land consolidation adaptation intention; A structural equation modeling approach, the case of Sichuan province, China. China Agricultural	1. Farmers' efforts to promote land consolidation (LC) in the context of Environmental Sustainability.	1. Awareness LC 2. Perception LC	3. Intention to Adaptation	6	China
4	Wilburn, K., & Wilburn, R. (2015).	Social purpose in a social media world	1. CSR	1. Enhancing Transparency 2. Connecting with Stakeholders 3. Awareness Campaigns 4. Monitoring and Responding to Issues 5. Measuring Responses to Sustainability Initiatives 6. Improving Accountability 7. Conventional Challenges	1. community engagement 2. Perbaikan Reputasi 3. Reputasi dan Filantropi	4	USA
5	Dowin Kennedy, E., Horky, A. B., & Kaufmann, E. (2023).	Ties that bind: leveraging horizontal and vertical ties within an entrepreneurial community in cross-promotional social media marketing	1. Event 2. Product promotion 3. Shoutout (promosi positif)	1. Publicity 2. Drive traffic contain 3. improve brand perception	1. Raising Awareness 2. Expanding Networks 3. Increasing Sales 4. Broadening Reach 5. Business Collaboration 6. Enhancing Reputation and Trust 7. Boosting Engagement	3	United State of American
6	Asogwa, C. E., Oyesomi, K., Olijo, I. I., Igboke, A., Onah, O. G., & Gever, V. C. (2023).	Impact of Internet-based media on food supply-chain among Ukraina & farmers following Russia's invasion	1. Supply chain	1. Internet Based platforms	1. Expanding Reach	0	Ukraina
7	Dilleen, G., Claffey, E., Foley, A., & Doolin, K. (2023).	Investigating knowledge dissemination and social media use in the farming network to build trust in smart-farming technology adoption	1. Network 2. enables knowledge transfer, 3. observation, 4. advice seeking and sense checking	1. Actor engagement 2. Trust in the network 3. Digital communication channels 4. Information search,sense making and networking 5. Trust in social media content	1. Sustainable Farming Technologies	0	Unknown

8	Gever, V. C., Abdullah, N. N., Onakpa, M. S., Onah, O. G., Onyia, C. C., Iwundu, I. E., & Gever, E. R. (2023).	Developing and testing a social media-based intervention for improving business skills and income levels of young small holder farmers	1. Business Skills 2. Income level	6. Social media intervention (Business skills: leadership, time management, communication and negotiation, marketing, financial management and networking	2. Business Diversification.	3	Unknown
9	Mansour, E. (2023).	Information and communication technologies'(ICTs) use among farmers in Qena Governorate of Upper Egypt.	1. Getting special materials for agriculture 3. Getting information 4. Knowledge and discovery of diseases 5. Acquisition of skills	1. Access to ICT resources for farmers. 2. The government conducts workshops, training, and raises awareness on ICT.	1. Creating ICT-based initiatives for making farming decisions	3	Egypt
10	Das, P., & Pradip, D. (2021).	Usability and effectiveness of new media in agricultural learning and development: a case study on the southern states of India.	1. New media accessibility 2. New media usebillity	1. Adoption of new media technologies	2. Decision to E-agriculture learning and interaction 3. Decision to online social marketing	6	India
11	Dangi, N., & Narula, S. A. (2020).	Sharing economy approach for the development of the organic food market in India. Management of Environmental Quality: An International Journal, 32(1), 114-126.	1. Sertifikasi kelompok produksi; 2. berbagi peralatan produksi, keterampilan, 3. dan pengetahuan produksi	1. Sharing market space; 2. Sharing knowledge and skills online (social media) & offline (personally); 3. access over ownership	2. Organic food markets, 3. Organic farmers markets, 4. Sharing economy, 5. Organic food value chain	7	India
12	Shiri, N. (2021)..	Attitude toward organic agribusiness: an approach to developing sustainable business. British Food Journal, 123(10), 3265-3276	1. Promoting sustainable agribusinesses	1. Attitude about Organic Agribusiness	1. Sustainable agriculture, Organic agribusiness, Sustainable businesses	10	Iran
13	Komodromos, M. (2021)..	Interactive radio, social network sites and development in Africa: a literature review study. Journal of Enterprising Communities: People and Places in the Global Economy, 15(2), 282-295	1. Interactive 2. Social Networking	1. help in the application of knowledge" 2. Increase Awareness and Adoption of Suitable Agricultural Practices 3. Improve Health-Related Knowledge 4. Enhance Access to Education Among Marginalized Communities 2. Promote the Public's Participation in Governance	2. Sustainable farming practices	7	Africa

14	Wang, Z., Ali, S., Akbar, A., & Rasool, F. (2020).	Determining the Influencing Factors of Biogas Technology Adoption Intention in Pakistan: The Moderating Role of Social Media	1. Awareness of consequences 2. Ascription of responsibility 3. Perceived Consumer Effectiveness 4. environmental concerns	1. Personal norms	1. Intention adopt technology	55	Pakistan
15	Laurett, R., Paço, A., & Mainardes, E. W. (2021).	Antecedents and consequences of sustainable development in agriculture and the moderator role of the barriers: Proposal and test of a structural model. Journal of Rural Studies, 86, 270-281	1. external influencers 2. engagement with sustainability 3. concern about future generations 4. environmental motivators, 5. Individual characteristics	1. perception of sustainability 2. Development in agriculture	1. socio – environmental benefit 2. subjective wellbeing	17	Unknown
16	Stevens, T. M., Aarts, N., Termeer, C. J. A. M., & Dewulf, A. (2016).	Social media as a new playing field for the governance of agro-food sustainability. Current Opinion in Environmental Sustainability	1. for the Governance of Agro-Food Sustainability 2. people create, share or exchange information and ideas in virtual communities	1. help in the application of knowledge"	1. Sustainable farming practices	81	Unknown
17	Zhang W, 2021, J Mark	Social Media, Influencers, And Adoption Of An Eco-Friendly Product: Field Experiment Evidence From Rural China	1. to reduce customer uncertainty about new eco-friendly agricultural products in rural China, which has been identified as a barrier to adoption.	1. Low-cost social media tools for marketing. 2. Peer and company information reduces uncertainty. 3. Platform less effective than one-on-one support for credibility. 4. Influencers help despite lacking expertise.	1. Effective marketing. 2. Reference influence. 2. Learning impact. 3. Platform limitations. 4. Field experiments.	68	China
18	Neogi AS, 2021	Sentiment Analysis And Classification Of Indian Farmers' Protest Using Twitter Data	1. Growing global protests and increased use of social media for expressing sentiments, particularly the Indian farmers' protest.	1. Data analyzed from 20,000 protest tweets. 2. Used Bag of Words and ML algorithms. 3. Bag of Words performed better.	1. Helps government make informed policies. 2. Requires advanced computational tools. 2. and classifies social media sentiments. 3. Focuses on machine learning for sentiment analysis..	133	India
19	Pilar L, 2016	Farmers' Markets: Positive Feelings Of Instagram Posts	1. Increasing recognition of social media as a marketing tool, particularly Instagram, for farmers and vendors to engage with consumers	1. Six major areas of positive feelings identified: Healthy, Good, Great, Happy, Nice, Perfect. 2. hashtags indicated these positive feelings.	1. Most Instagram users (95.3%) express positive feelings about farmers' markets. 2. Positive feelings related to healthy eating, local products,	22	Czech

					and support for local farmers		
20	Pilar L, 2018	Customer Experience With Farmers' Markets: What Hashtags Can Reveal	1. Growing use of social media in daily life. 2. to explore social, cultural, and environmental issues.	1. Six key hashtags reveal customer values. Four distinct customer segments with unique traits. 2. Interconnected communities show complex attitudes. 3. Visual network highlights separate centers.	1. Study informs marketing and management strategies. 2. Reveals diverse customer communities. 3. Highlights social media's role in shaping values.	41	Czech
21	Faxon, H. O. (2023).	Small farmers, big tech: agrarian commerce and knowledge on Myanmar Facebook. Agriculture and Human Values	1. Economic Needs and Technological Development 2. Availability of Relevant Social Media Platforms 3. Marketing and Promotion of Agricultural Products 4. Access to Agricultural Information and Networks 5. Limited Official Support and Conventional Knowledge 6. Engagement and Dependence on Farming Communities and Practitioners	1. Sharing Knowledge in Facebook Groups and Pages 2. Buying and Selling Seeds and Agricultural Goods 3. Expressing Critique of Agricultural Structure 4. Accessing Market Information	4. Decision Access to Information and Markets 5. Decision Access to the Use of Agronomic Knowledge 6. Decision Access to Appropriated Agritech (Technology Use in Agriculture)	2	Myanmar
22	Garner, B. (2022).	Using Social Media to Establish Authenticity: An Analysis of a Small Dairy Farm's Use of Facebook	7. Brand Identity dan Authenticity 8. Health dan Natural Claims 9. Solidaritas dengan Petani 10. Transparansi dan Vulnerability	1. Posting Images and Videos 2. Education-Based Content 3. Comments and Support 4. Openness about Challenges and Vulnerabilities	1. Brand Identity and Trust Building 2. Engagement and Relationship Building 3. Transparency: 4. Local Branding and Promotion 5. Moral and Ethical Positioning 6. Consumer Expectations and Responsiveness: 7. Vulnerability and Authenticity 8. Cultural Relevance 9. Consistency	6	Northeast Kansas, United States.