



## Rural and agricultural productive development behavior. A literature review from the theory of planned behavior between 2008 and 2022

### Comportamiento de desarrollo productivo rural y agrícola. Una revisión de literatura desde la teoría del comportamiento planificado entre 2008 y 2022

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#### Abstract

The different studies on behavior and decision-making in rural, agro-industrial, territorial, and development projects have gained importance in recent years, mainly due to the need to understand

and comprehend those factors of human behavior that affect productive rural development. A systematic review of the literature on planned behavior in rural and agricultural project development between 2008 and 2022 was carried out. The work was carried out by consulting scientific and academic databases such as ScienceDirect, ISI - Web of Science, Springer, Scielo, Emerald, and Scopus, completing the process with content analysis and systematization of articles in NVivo software. Three significant clusters of studies focused on development behavior, rural behavior, and productive development were identified. It was concluded that behavioral studies and their different analysis methods in the rural and agricultural fields aim to improve standard practices through participatory methodological proposals, which reflect on social behavior and the adoption and implementation of practical agricultural development models.

**Keywords:** economic performance; rural development; development projects.

### **Resumen**

Los diferentes estudios sobre el comportamiento y la toma de decisiones en proyectos rurales, agroindustriales, territoriales y de desarrollo han tomado importancia en los últimos años, principalmente, por la necesidad de entender y comprender aquellos factores de la conducta humana que inciden en el desarrollo productivo rural. Se realizó un repaso sistemático de la literatura sobre el comportamiento planeado en el marco del desarrollo de proyectos rurales y agrícolas entre los años 2008 y 2022. El trabajo se realizó a través de la consulta de bases de datos científicas y académicas como ScienceDirect, ISI – Web of Science, Springer, Scielo, Emerald y Scopus, completando el proceso con análisis de contenido y sistematización de artículos en el software NVivo. Identificando tres grandes conglomerados de estudios enfocados en el comportamiento de desarrollo, comportamiento rural y desarrollo productivo. Concluyéndose que los estudios comportamentales y sus diferentes métodos de análisis, en el ámbito rural y agrícola pretenden mejorar las prácticas comunes por medio de propuestas metodológicas participativas, que lleven a reflexionar sobre el comportamiento social y la adopción e implementación de modelos de desarrollo agrícolas prácticos.

**Palabras claves:** comportamiento económico; desarrollo rural; proyectos de desarrollo.

### **Introduction**

The different studies on behavior and decision-making in rural, agro-industrial, territorial, and development projects have become very important in recent years, mainly because of the need to account for and understand those factors of human behavior that affect productive rural development. In this scenario, researchers have focused on the optimal selection of alternatives, understood as the product of a complex set of stimuli and emotions directed to a given action (Ordoñez et al., 2021), which seeks the success of projects and rural progress (Palacios & Estrada, 2020). In other words, the aim is to understand how farmers can adapt effectively to ensure their growth and well-being over time.

Thus, the study incorporated ethical approaches, which imply an approach based on the theory of planned behavior (Ajzen, 1991), and to give another look at those factors of the productive units in rural areas, which in favor of their development affect the intention to act (Nettle et al., 2021; Nguyen et al., 2021; Pérez & Egea, 2019; Ranjbar et al., 2021; Rezaei et al., 2020; Rezaei et al., 2018; Sarkar et al., 2022; Was et al., 2021). Now, in this rural context, the behavior has been directly associated with the decision to elaborate works for the implementation

of new telecommunication technologies (ICT) and to execute agricultural projects that contribute to the improvement of standard practices that include training for the strengthening of interactive learning (Fang et al., 2021; Kaufmann et al., 2009; Landmann et al., 2020; Mwalupaso et al., 2019; Omulo & Kumeh, 2020). However, this issue has also been addressed in the social sphere, where behavioral aspects begin with the adoption and implementation of flexible agricultural development models that guarantee the improvement of rural production and social welfare over time (Caffaro et al., 2021; Galdino et al., 2013; Kangogo et al., 2021).

However, in a certain way, these meanings are absorbed by the awareness that decisions have repercussions on society; therefore, the actors' role as agents of social change is recognized (Wang & Strong, 1996). Thus, the studies developed in recent years in the organizational field, based on the theory of planned behavior as an extension of the theory of reasoned action (Ajzen, 1991), have focused on categories where the study of behavior is analyzed from the psychological factors that influence decision-making within rural and agricultural communities; it is studied thinking about the implementation of new technologies for rural projects; and finally on social behavior, which leads to the productive development of communities, (Caffaro et al., 2020; Caffaro et al., 2021; Chatterjee et al., 2020; Alavion & Taghdisi, 2020; Bouichou et al., 2021; Galdino et al., 2013), among others., and thus strengthen social trust, understood as that trust in the unknown, to be able according to Schumacher, as cited in Martin, (2020) to restore a proper balance between city and rural life, which is, perhaps, the most significant task that man has today.

For all this, it can be said that recent publications and articles expose more holistic models, which seek to recognize the different conscious and unconscious factors that affect decision-making, such as the works of Fang et al. (2020), identify the need for practices that allow improvement in the processes for the strengthening of agriculture, as in the research of Abu-Bakar, et al., (2020); and Adnan et al., (2019) and, detect a dynamic way to improve in agricultural production processes, as in the studies of Alavion & Taghdisi, (2020); and Bouichou, et al., (2021)

Therefore, the following question arises: How can the literature on the theory of planned behavior be characterized in terms of theories, methods, and findings on rural and agricultural productive development? Thus, the article presents, in a panoramic way, a systematic review of the literature on planned behavior in the framework of agricultural and rural projects, using publications from indexed journals categorized Q1, Q2, Q3, and Q4 according to the Scimago Journal ranking. The method adopted was the literature review proposed by Cronin, Ryan, and Coughlan (2008).

### **Material and methods**

The development of the systematic literature review was focused on processing, ordering, and examining information from different studies to identify and evaluate the effectiveness and to broaden research perspectives. Thus, the following is a detailed description of how the article was developed.

To begin with the exploration, the author Cronin et al. (2008), which argues that "it is better to start with a specific topic and, if necessary, broaden the scope of the review as it progresses" (p. 39), was taken into account, therefore, at the first moment, the research begins to inquire about

rural projects and planned behavior, which yields several results, but not enough for the research analysis. Therefore, it is necessary to continue the search in a foreign language, the term "rural project" being delimited to the behavior of agricultural and rural productive development, allowing a broader spectrum of study. As a second search descriptor, the combination of "rural project" and "Theory of Planned Behavior" was used, focusing and directing the topic of study even more.

To avoid dispersion in the results (Cronin et al., 2008), the research was directed towards behavior, productive agricultural development, rural project, and development Project in the primary databases with academic and scientific rigor, such as ScienceDirect, ISI - Web of Science, Springer, Emerald, and Scopus, entering and adjusting the search parameters to economic, administrative and social science journals. In addition, the information was filtered mainly for titles and abstracts of articles published in the last five years, the last two years being the ones that contributed the most to these topics.

The initial literature result yielded 660 articles located in different scientific databases, a selection of scientific articles duly validated according to (Podsakoff et al., 2005) was made, including search terms such as the theory of planned behavior and social capital in addition to those mentioned above. After this first exclusion, 115 articles were retained, to which a filter related to rural and agricultural development was applied, keeping 64 scientific articles published in Q1, Q2, Q3, and Q4 journals, which were rigorously validated in Scimago Journal and Country Rank. In that order, the respective individual analysis was made, considering points such as objectives, scope, similarities, type of study, type of analysis, discussions, and conclusions to finally complete the study with the content analysis and systematization of the 64 articles in the NVivo software, showing interest in articles related to behavior for productive rural development.

## **Results and Discussion**

### **Theory of Planned Behavior (TPB)**

According to TPB, people's important behaviors are intentional. Although external and personal constraints make it difficult to act, the immediate determinant of the behavior is the person's intention to perform that behavior (Nuttavuthisit & Thøgersen, 2017). Therefore, TPB is an adequate behavioral theory to explain the intentions and behaviors of individuals (Sun, & Linton, 2018), as it can be predicted with considerable accuracy based on evidence that within the variables of analysis, there are items such as attitudes toward behavior (ATT), subjective norms regarding behavior (SN), and perceived control over behavior (PBC) (Sussman & Gifford, 2019; Colqui & Palomino, 2021; Emekci, 2019; Tomás, 2001; Durán et al., 2007; Miranda & Briley, 2021; Sanz et al., 2014 and Choque, 2020). That is, intentions are supposed to capture the motivational factors that influence behavior; they indicate how much people are willing to try and strive to perform the behavior. As a rule, the stronger the intention to engage in a behavior, the more likely it should be to perform. (Ajzen, 1991, p. 181; Emekci, 2019).

To better understand these terms, attitude should be understood as a perception that describes a psychosomatic pathway of evaluating an exact thing with kindness or disrepute (Alavion & Taghdisi, 2020; Giampietri et al., 2018; Lanza et al., 2021; Mohammadinezhad & Ahmadvand, 2020; Ranjbar et al., 2021; Senger et al., 2017; Tóth et al., 2020; Abu-Bakar et al.,

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2020; Krishnadas & Renganathan, 2021; Pérez & Egea, 2019). That is, attitude toward the behavior refers to the degree to which the person has a favorable or unfavorable evaluation of the behavior in question (Ajzen, 1991).

The other term to understand is subjective norms, meaning that some critical people think the individual should engage in a specific behavior. The individual's inspiration complies with their thinking (Ajzen & Fishben, 1980). That is, the second predictor is a social factor called subjective norm and refers to the perceived social pressure to perform or not perform the behavior (Ajzen, 1991; Sharahiley, 2020), where the family environment is a social pressure that directly influences the intention to undertake (Moriano, Palací, & Morales, 2006). The third construct that can influence intention is perceived control, which relates to an individual's perception of the degree of ease and difficulties in performing such productive behavior (Abadi et al., 2020; Chin et al., 2016; Mohammadinezhad & Ahmadvand, 2020; Nguyen et al., 2021; Rezaei et al., 2020; Sarkar et al., 2022; Was et al., 2021; Xiao et al., 2020). The reason why these variables have allowed TPB to be used in numerous studies as mentioned (Adnan et al., 2019; Wang et al., 2020; Chatterjee et al., 2020; Kumar & Das, 2019; Ranjbar et al., 2021; Shen & Shen, 2020; Wang et al., 2021; Xiao et al., 2020; Agovino et al., 2017), focused on productive behavior and value creation.

### **The behavior of rural development**

Behavior for rural development starts from the basis of the individual in society, approaching the behavioral problem from the perspective of the "number," to put it colloquially. Thus, it is usually conceived that an individual behavior becomes social when one of two criteria is met: first, that the individual is part of a relatively stable group over time or, second, that it is an interaction between two individuals, whether in the context of a group (Ribes et al., 2008). Thus, change in societies should be understood as social development as a process of local or rural change that operates in the context of an inclusive democracy or through an inclusive modernization in which all social, state, and private sector actors participate, where peasant organizations and certain NGOs have to assume leading roles (Machado, 1991, p. 179); it should also be mentioned that rural development should be observed from various dimensions that can affect the behavior of the individual and the context in which decisions are made.

In an environment of rural projects for community development, behavior starts from the responsibility of governments to support and protect the knowledge and know-how of the countryside as an essential part of their entrepreneurial spirit, in which case, crucial activities are identified, allowing them to represent a new and valuable development perspective focused on dialogue and communication as sustainable tools for their projects. In this sense, behavior is influenced by positive synergies that establish new balances of well-being in the community, which drives the rural and social enterprise to be more competitive, promoting positive impacts on their environment and providing protection of human dignity (Annandale et al., 2021; Boadu et al., 2020; Trupp et al., 2021).

Therefore, the concept of rural development for the purposes of this document is understood, according to Crespo (2011), as a "set of concrete activities aimed at achieving one or more objectives, to respond to the needs, aspirations, and potential of the communities" (p.89),

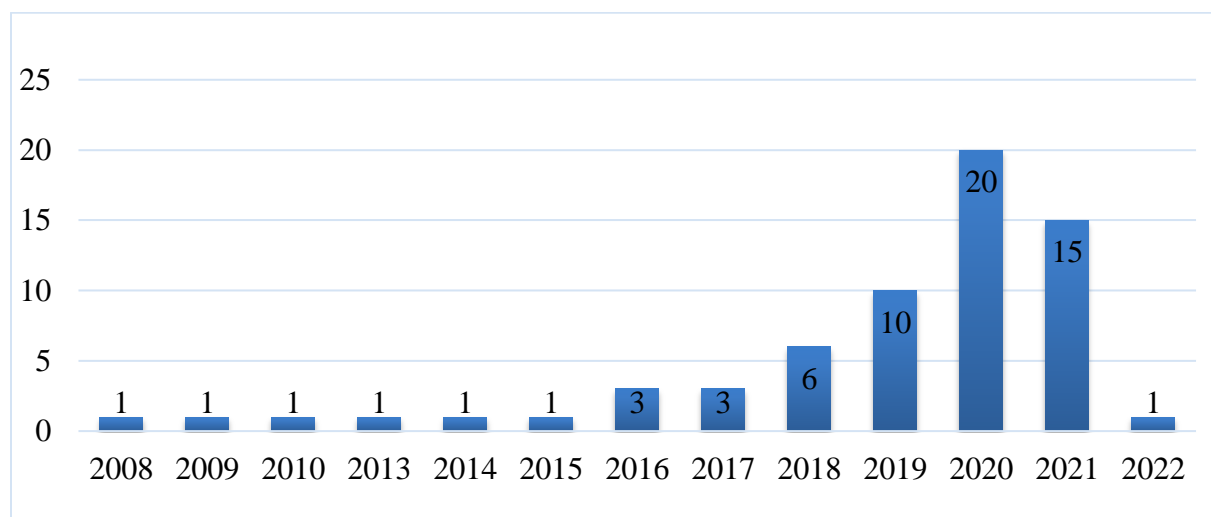
also, through these projects, to advance in the construction of a better society that consolidates values of the common good and healthy and productive coexistence. Therefore, it intends to intervene in concrete reality and contribute, according to Almaguer et al. (2021), to the "development of the territory/s and community/s where it acts, and impact on the quality of life of the population, enhancing the capacities of the participating groups and actors and taking advantage of their own resources and potentialities in the solution of the problems posed" (439). In this sense, it is a process of growth and structural change of the local economy, in which at least the economic, sociocultural, political, and administrative dimensions can be identified, in which case the initiatives create a local environment favorable to production and promote development (Aghón et al., 2001)—becoming "a methodical tool to develop works that allow contributing to the integral transformation" (Romero & Zabala, 2019, p.159).

### Overview of publications

In the first instance, Figure 1 shows the distribution of the articles consulted between 2008 and 2022, evidencing a continuous evolution in recent years. In such a way, it can be seen how the interest in this topic takes more strength and research relevance.

**Figure 1**

*Articles consulted by year of publication*



*Source:* Own elaboration.

Likewise, international scientific journals were consulted, focusing on topics associated with development behavior, productive development decisions, rural behavior, and rural, agro-industrial, and territorial projects. Table 1 shows the grouping of journals by category according to Scimago Journal and Country Rank, where the journals located in the Q1 category represent 84%, highlighting the journal Land Use Policy with a total of 6 articles, equivalent to 11% of the articles consulted, followed by the journals Journal of Cleaner Production and Sustainability with five articles each, equivalent to 18% of the total number of articles consulted. Likewise, five journals were consulted whose category is located in Q2, with a participation of 11%, highlighting



The European Journal of Development Research with two articles, equivalent to 2% of the total articles. Finally, one journal in category Q3 and two in category Q4 were consulted, whose participation gives 5% of the total number of publications consulted.

**Table 1**

*Classification of journals consulted*

Name of the Magazine	Quantity Items	Name of the Magazine	Quantity Items
<u>Q1 Scimago ranked journal</u>		<u>Q1 Scimago ranked journal</u>	
Agricultura Water Management	1	Science of the Total Environment	1
Journal of Entrepreneurship in Emerging Economies	1	Sustainable Energy Technologies and Assessments	1
Agronomy	2	Tourism Review	1
Aibi revista de investigación	1	Trends in Food Science & Technology	1
Bio-based and Applied Economics	1	Food Quality and Preference	2
Biomass and Bioenergy	1	Journal of Hydrology	1
Cleaner and Circular Bioeconomy	1	Livestock Science	2
Computers and Electronics in Agriculture	1	Renewable Energy	2
Ecological Economics	2	Technological Forecasting & Social Change	2
Energy & Buildings	1	Journal of Environmental Management	3
Energy Policy	1	Journal of Rural Studies	3
Environment, Development and Sustainability	2	Journal of Cleaner Production	5
Environmental Science and Policy	1	<u>Q2 Scimago ranked journal</u>	
Food Control	1	International Journal of Social Economics	1
Food Quality and Preference	2	Journal of Agricultural Science and Technology	1
Journal of Environmental Planning and Management	1	Journal of Asian Finance, Economics and Business	1
Habitat International	1	Journal of Enterprising Communities	1
Heliyon	1	The European Journal of Development Research	2
Information Processing in Agriculture	1	<u>Q3 Scimago ranked journal</u>	
Agricultural Systems	1	Water Science and Technology	1
Global Ecology and Conservation	1	<u>Q4 Scimago ranked journal</u>	
International Journal of Entrepreneurial Behavior & Research	2	IOP Conference Series: Earth and Environmental Science	1
Journal of Safety Research	1	Material Today: Proceedings	1
Land Use Policy	3		

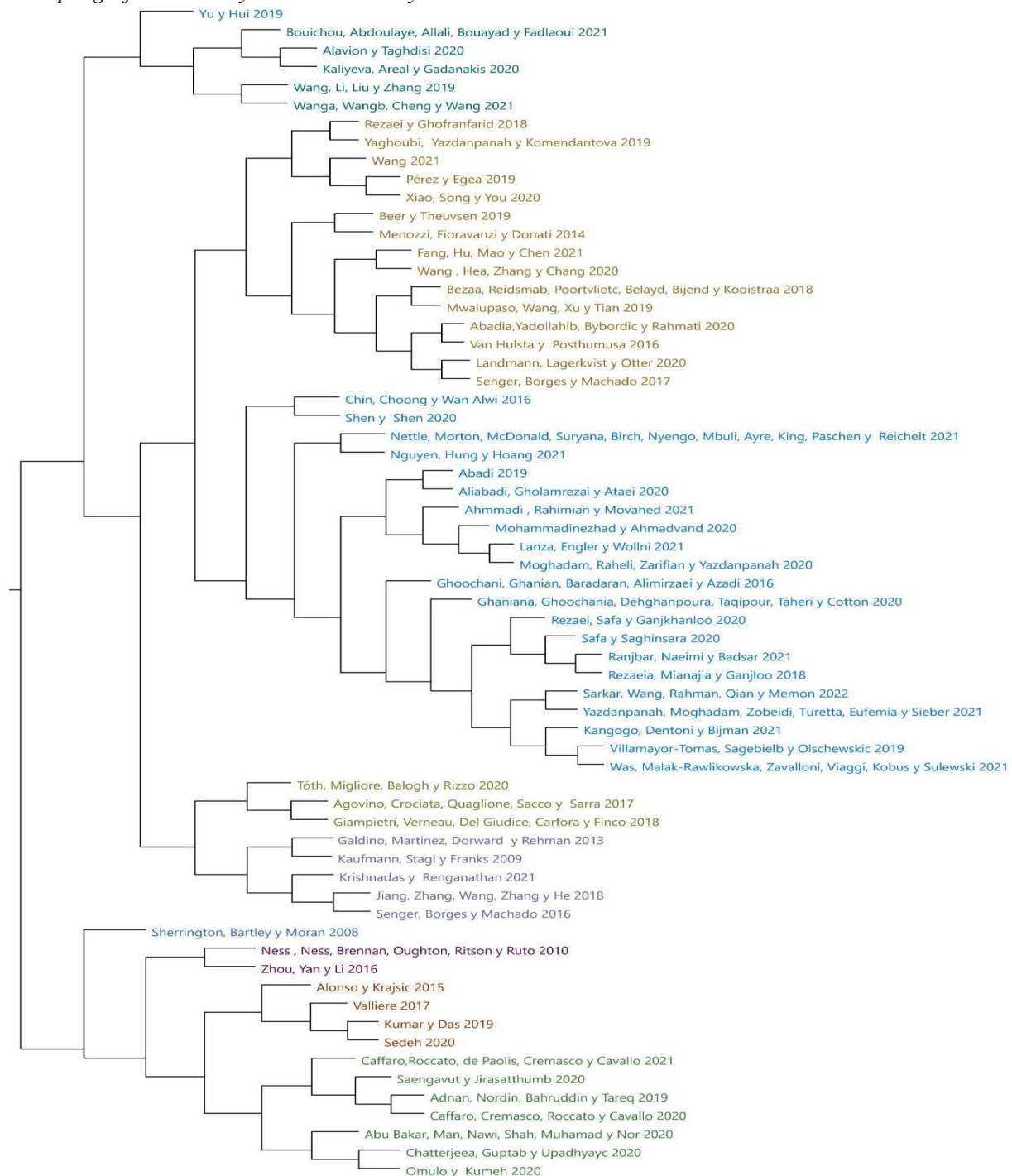
*Note:* Based on the Quartiles created by Scimago Journal and Country Rank 2022.

With respect to the analysis of the dendogram, the development of agricultural projects through the theory of planned behavior has been approached from different fields related to

Development Behavior, Rural Behavior, and Productive Development. Three clusters appear, whose vertical analysis, from top to bottom, allows us to see the grouping relationships between the articles and their similarities with respect to the topics of interest found in relation to agricultural projects.

**Figure 2**

*Grouping of articles by word similarity*





*Note:* Grouping by relationships and similarities between selected articles, using Nvivo 12 software.

About the first cluster, one finds articles whose purpose is to explain Development Behavior (see, for example, Abadi et al., 2020; Kangogo et al., 2021); furthermore, these articles seek to incorporate the theory of planned behavior (TPB) to capacity development, given that some of them such as proactivity is associated with the adoption of intensive practices. Therefore, the studies focus on considering the interrelationships between practices and farmers' entrepreneurial orientation when designing development interventions while reviewing the enabling environment for farmers' entrepreneurship as an indirect way to support adopting appropriate development practices.

The second cluster is characterized by articles illustrating the importance of information and communication technologies (ICT) in facilitating rural development and how the intention of ICT adoption enables an ideal entrepreneurial environment (Chatterjee et al., 2020; Kaliyeva et al., 2020; Alavion & Taghdisi, 2020). These studies highlight different types of access, such as mental, material, skill, and usage, which contribute significantly to ICT adoption among the rural population. Such ICT adoption leads to innovation, which drives entrepreneurial orientation to aid micro-entrepreneurship. In this sense, it is shown how the motivation of the rural household can increase participation in government programs aimed at promoting a rural cooperative culture based on various psychological factors, sociodemographic characteristics of the rural household, the production structure, the level of information on the cooperative support program, cultural aspects, and the proximity of the household to the main market.

In the third cluster, there are works based on the essential role of agriculture in economic development through agricultural mechanization, which allows the use of operational agricultural knowledge to minimize energy, and labor costs and increase productivity (Agovino et al., 2017; Krishnadas & Renganathan, 2021; Tóth et al., 2020), where the theory of planned behavior (TPB) is applied to see how innovation impacts decision-making through the productive and sustainable development of agriculture.

This research also considered the topics studied and their key findings (Table 2). It can be seen that the most significant number of studies focus on purchase behavior and purchase intention for organic products, where the actual purchase depends on various behavioral factors, among which attitude, knowledge, and beliefs stand out.

Now, the exploration of research articles and various publications on topics related to the intention and behavior of developing rural or agricultural projects is considered an essential point in the key conclusions (Table 2), where it can be seen that most of the publications are framed in the identification of the reasons that persuade the agricultural community in making decisions; The first and most notorious category refers to the development behavior according to the intentions or decisions adopted in the community at the time of making a decision, the second refers to rural behavior, and the last one refers to productive development where social behavior is analyzed in terms of the capacity to implement and put into practice new processes and strategies. And strategies.

**Table 2**

*Analysis topics*

Subject	Main conclusions	Study
Developmental Behavior	<p>Based on the theory of planned behavior, and with the aim of implementing actions and improving public policies that, in some cases, have not generated the expected impact, we seek to identify the different conscious and unconscious psychological factors that influence and affect the mentality and will of farmers and consumers in various parts of Europe and Asia when adopting or implementing new pro-environmental techniques in agriculture. These techniques can generate a different dynamic in terms of cost reduction, as well as the reduction of carbon emissions, and at the same time, help to innovate and diversify the development of agriculture, covering a diversity of crops throughout the different regions.</p>	<p>Abadi (2019); Abadi, et al. (2020); Ahmmadi, et al. (2021); Aliabadi, et al. (2020); Beer &amp; Theuvsen (2019); Bezaa, et al. (2018); Chin, et al. (2016); Fang, et al. (2021); Ghaniana, et al. (2020); Ghoochani, et al. (2018); Kangogo, et al. (2021); Landmann, et al. (2020); Lanza, et al. (2021); Menozzi, et al. (2014); Moghadam, et al. (2020); Mohammadinezhad &amp; Ahmadvand (2020); Mwalupaso, et al. (2019); Nettle, et al. (2021); Nguyen, et al. (2021); Pérez &amp; Egea (2019); Ranjbar, et al. (2021); Rezaei &amp; Ghofranfarid (2018); Rezaei, et al. (2020); Rezaei, et al. (2018); Safa &amp; Saghinsara (2020); Sarkar, et al. (2022); Senger, et al. (2017); Shen &amp; Shen (2020); Van et al. (2016); Villamayor, et al. (2019); Wang, et al. (2020); Wang (2021); Was, et al. (2021); Xiao, et al. (2020); Yaghoubi, et al. (2019); Yazdanpanah, et al. (2021).</p>
Rural Behavior	<p>Projects for the implementation of new ICT telecommunications technologies within the agricultural community in Europe and Asia, which seek with their use to contribute to the improvement of the most used practices in agricultural processes, as well as the training of farmers for the promotion of interactive learning with actions that can be used in the day to day of the crops, so that in this way they can obtain more significant benefits in production and turn to contribute to improvements in the implementation of eco-friendly processes.</p>	<p>Abu-Bakar, et al. (2020); Adnan, et al. (2019); Alonso &amp; Krajsic (2015); Caffaro, et al. (2020); Caffaro, et al. (2021); Chatterjeea, et al. (2020); Kumar &amp; Das (2019); Ness, et al. (2010); Omulo &amp; Kumeh (2020); Saengavut &amp; Jirasatthumb (2021); Sedeh et al, (2020); Sherrington, et al. (2008); Valliere (2017); Zhou, et al. (2016).</p>
Productive Development	<p>In the spirit of implementing agricultural sustainability, we study social behavior in developing countries on issues related to the adoption and implementation of agricultural development models, which are climate adaptable, as well as security models and, in general, all types of models that allow farmers to adapt effectively, to ensure improved crop production and welfare over time.</p>	<p>Agovino, et al. (2017); Alavion &amp; Taghdisi (2020); Bouichou, et al. (2021); Galdino, et al. (2013); Giampietri, et al. (2018); Jiang, et al. (2018); Kaliyeva, et al. (2020); Kaufmann, et al. (2009); Krishnadas &amp; Renganathan (2021); Senger, et al. (2016); Tóth, et al. (2020); Wang, et al. (2019); Wanga, et al. (2021); Yu &amp; Hui (2019).</p>

*Note:* The table presents the grouping of general conclusions by thematic axis associated with the planned behavior.

## Types of study and type of analysis

Analyzing the typology of the articles concerning the type of study carried out (Table 3), it was found that the theoretical studies found accounted for 9.3% of the total number of articles, and the remaining 90.7% was equivalent to 58 empirical papers, which were analyzed with quantitative approaches, in which quantitative statistical and econometric techniques are applied, such as structural equations or EQS, descriptive statistics, bivariate analysis, correlations, confirmatory factor analysis, logistic, linear and multiple regressions. The analysis is in Table 3. It shows that the methodologies used in these studies are inclined to carry out studies with statistical rigor, and there needs to be more interest in qualitative and mixed studies.

**Table 3**

### *Classification of journals consulted*

Type of Study	Type of analysis	Study	
Theoretical	Systematic literature review	Adnan, et al. (2019); Valliere (2017).	
	Descriptive literature review	Wang, et al. (2020); Sherrington, et al. (2008); Omulo & Kumeh (2020); Kaufmann, et al. (2009).	
Empirical	Quantitative	Structural equations or SSE	Ahmmadi, et al. (2021); Alavion & Taghdisi (2020); Aliabadi, et al. (2020); Bezaa, et al. (2018); Caffaro, et al. (2020); Caffaro, et al. (2021); Chatterjeea, et al. (2020); Chin, et al. (2016); Ghaniana, et al. (2020); Ghoochani, et al. (2018); Giampietri, et al. (2018); Kumar & Das (2019); Landmann, et al. (2020); Lanza, et al. (2021); Menozzi, et al. (2014); Moghadam, et al. (2020); Mohammadinezhad & Ahmadvand (2020); Ness, et al. (2010); Ranjbar, et al. (2021); Rezaei & Ghofranfarid (2018); Rezaei, et al. (2018); Saengavut & Jirasatthumb (2021); Sarkar, et al. (2022); Senger, et al. (2017); Shen & Shen (2020); Tóth, et al. (2020); Wang (2021); Wang, et al. (2019); Wanga, et al. (2021); Xiao, et al. (2020); Yaghoubi, et al. (2019); Yazdanpanah, et al. (2021).
		Descriptive statistics	Agovino, et al. (2017); Alonso & Krajsic (2015); Beer & Theuvsen (2019); Fang, et al. (2021); Jiang, et al. (2018); Mwalupaso, et al. (2019); Yu & Hui (2019).
		Bivariate analysis	Kaliyeva, et al. (2020).
		Correlation	Abu-Bakar, et al. (2020); Galdino, et al. (2013); Kangogo, et al. (2021); Rezaei, et al. (2020); Senger, et al. (2016).
		Linear regression	Nguyen, et al., (2021); Sedeh et al, (2020).
		Confirmatory factor analysis	Abadi (2019); Safa & Saghinsara (2020).
		Logistic regression	Bouichou, et al. (2021); Nettle, et al. (2021); Van et al., (2016); Was, et al. (2021); Zhou, et al. (2016).
		Maximum likelihood	Villamayor, et al. (2019).
		Multiple regression analysis	Abadi, et al. (2020); Krishnadas & Renganathan (2021); Pérez & Egea (2019).

*Note:* Main types of studies and analyses used in the articles reviewed.

## **Discussion, implications and future lines of research**

Some theoretical and practical implications were identified about the study, and the exploration of literature was carried out on the various articles and research. One conclusion is that the theory of planned behavior is adequate to explain rural and agricultural productive development behavior because it accurately predicts both intentions and behaviors based on determining factors such as attitudes, subjective norms, and perceived controls (Ajzen, 2002; Corral, 2003). Therefore, applied research should address these issues openly to promote and encourage sustainable behavior (Pires et al., 2014), which points to the approach of social and environmental attributes oriented to the collective benefit.

At this point, it should be noted that psychological variables within rural and agricultural communities influence entrepreneurial intention. Clarifying that individualism, attitude, and propensity to loyalty are part of the influencing elements of the intention (Lu et al., 2015). In other words, most studies focus on understanding aspects of rural and agricultural development behavior, especially on entrepreneurship, productive, environmental, and social aspects. This implies delving into recent models based on the TPB to analyze the behavior and intention to undertake rural and agricultural projects. However, more studies are needed to confirm the results and analyze the behavioral models developed in rural and agricultural development.

Similarly, it is vital to analyze how other variables not considered in the articles analyzed modify the intention to undertake or decide to develop a project. The social trust variable could be included in these models as a determinant of the intention to undertake rural development projects. In some other publications (Lanza et al., 2021; Alavion & Taghdisi, 2020; Ahmmadi et al., 2021; Wang et al., 2020), the importance of perceived value concerning the intention to develop a project is mentioned since it is related to elements such as quality, risk, and publicity. Therefore, aiming at an integrated model that incorporates and validates different variables is essential.

Thus, it is vital to work on future lines of research that seek to understand the decision process to develop projects and, to this end, to resort to behavioral theories based on the TPB that facilitate understanding the different variables that affect the development action. Finally, the results show how most of the studies have a quantitative or qualitative approach, evidencing the need to work on mixed approaches that allow broadening the analysis integrally to understand agricultural and rural development behaviors and intentions.

## **Conclusions**

Consequently, it is necessary to understand the behavioral dynamics of the populations to implement new strategies within the agricultural and rural communities that guarantee, in some way, the permanence and improvement of the productive processes about time and efficiency within the agricultural productive life cycle; for this, and it is necessary to carry out a management that integrates all the actors under a single purpose, that of supporting the company and agricultural development, as the basis of the economy of the territory.

It is inferred that the adoption of information and communication technologies (ICT) facilitates rural development because they motivate innovation and exacerbate the entrepreneurial potential of farmers, added to the motivation of the rural household, participation in government programs aimed at promoting rural cooperative culture, where these variables are conducive to farmers can approach from home to the primary market, and no less important to evaluate their Productive Behavior, through agricultural mechanization, which allows farmers to take advantage of operative agricultural knowledge to minimize energy, labor costs and increase productivity, where the application of the theory of planned behavior (TPB) is interesting.

In short, it is understood that the study of behavior and its different methods of analysis are intended to contribute to the improvement of standard practices through participatory methodological proposals, which lead to reflection on social behavior and the adoption and implementation of practical agricultural development models, containing the main focus of agriculture, and which in turn propose continuous improvement within this practice. In this exercise, reviewing various exogenous variables that influence or may influence decision-making within rural projects is essential.

It is, therefore, necessary to build future lines of research which seek to understand better the intentions and actions aimed at rural project implementation and define rural development behaviour from a professional, entrepreneurial and ethnographic perspective, in which a broader understanding of the factors and variables that influence rural and agricultural development action is required. Finally, the results show how most of the studies adopted separate literature reviews, and quantitative and qualitative approaches, thus indicating the need for mixed methods to understand the behaviours and characteristics of rural development, entrepreneurship and social innovation.

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