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Crowdfunding agricultural ventures: psychological predictors of funding intentions and the role of climate change beliefs

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ABSTRACT

Despite the popularity of crowdfunding models, backers' support for agricultural ventures continues to lag, and knowledge of the psychological and environmental factors shaping consumers' propensity to support such ventures remains limited. Hence, the study proposes a model based on social exchange theory and examines the effects of perceived risk, rewards, and prosocial factors on funding intentions. The role of climate change beliefs was also explored, given the vulnerability of agriculture to climate change impacts. The model was tested on 257 crowdfunding backers in the Philippines following the partial least squares structural equation modeling technique. The findings indicate that altruism and warm glow predict funding intentions. High levels of climate change belief increase financial and emotional reward expectations and decrease altruistic drives and herding effects. Practical insights are provided into designing strategies for backer targeting and initiatives to assist farmers in adopting climate change mitigation strategies and sustainable practices.

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Introduction

Agriculture plays a major role in the economic development of many developing nations (Chang, 2018). However, insufficient capitalization hinders farmers from advancing farming productivity and performance (Kocollari et al., 2022). Accessing credit from formal financial institutions remains limited (Ljumović et al., 2021), as most farmer-producers cannot satisfy collateral, formal credit history, and other requirements (Pratiwi, 2023). In light of these, several crowdfunding models for agricultural ventures have emerged (Benna, 2019; Li et al., 2020). Crowdfunding employs platform mediation, calling ordinary individuals to contribute money to support projects with diverse objectives in return for tangible and intangible rewards (Schwienbacher & Larralde, 2010; Islam & Khan, 2020; Kragt et al., 2021). Crowdfunding takes on many forms, such as reward-based crowdfunding, equity crowdfunding, donation crowdfunding, and crowdlending (Ribeiro-Navarrete et al., 2022).

One common agricultural crowdfunding scheme operates similarly to crowdlending. Crowdlending is a subset of crowdfunding involving transactions between lenders and borrowers via an online platform. Unlike broader crowdfunding, where contributors often receive a range of products or perks, crowdlending specifically offers lenders financial compensation in the form of interest payments in exchange for the risk and duration of lending their funds to borrowers (Bruton et al., 2015; Ribeiro-Navarrete et al., 2022). This model enables borrowers to secure financing from lenders or investors who are primarily motivated by the expectation of financial returns (i.e. interest payments). Crowdlending is more focused

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on investment-driven behavior than broader crowdfunding, which may prioritize other forms of support or rewards.

In agricultural crowdfunding, people lend money to a farmer or agricultural enterprise and expect a fixed return on their investment, calculated as a percentage of the money they lent and paid to the lenders after a profitable harvest season (Cropital, 2023b). Platform companies offer various structures to help farmers minimize risks and improve their chances of success, ultimately benefiting them and the investors who support them through the crowdfunding platform. However, the uptake of this kind of crowdfunding model remains sparse (World Bank, 2013). Crowdfunding in the agri-food industry still operates on a smaller scale, and funding targets are reached slower than in other industries (Odorovic et al., 2021).

One distinguishing characteristic of crowdfunding models in agriculture is their susceptibility to risks posed by climate change (Legendre & Baker, 2021). Especially in less-developed territories, climate change vulnerability expands due to large dependence on agriculture, insufficient capital for adaptation measures, warm baseline climates, and frequent exposure to adverse climate scenarios (Parry et al., 2001). Prior studies argue that people's beliefs in climate change magnify risk perception and drive adaptive, mitigation, and climate-friendly behaviors (Azadi et al., 2019; Han et al., 2022). However, the literature has not fully explored its influence on individual funding decisions toward agricultural crowdfunding projects. The study suspects that individuals with strong beliefs about climate change may be more likely to fund agricultural projects on crowdfunding platforms since platforms offer measures that help farmers mitigate different risks (i.e. climate, pests, diseases, and market fluctuations) (Cropital, 2023a). Alternatively, individuals may perceive a greater risk to agricultural projects, as climate change inflates climate-related risks to agricultural productivity and performance (Bradley et al., 2020).

Delving into the broader crowdfunding literature, studies largely used cases from the Western-developed world (Basha et al., 2021). Moreover, through the lens of social exchange theory (SET), scholars argue that crowdfunding depicts social exchanges between actors (i.e. founder and backers), and they seek to maximize the benefits over the costs of their social engagement in the crowdfunding platform (Zhao et al., 2017). For backers, funding behavior looms when the tangible or intangible benefits outweigh the costs of supporting a project (Zhao et al., 2017; Alegre and Moleskis, 2021). Financial gains and psychological/emotional rewards are important motivations for backers' funding behavior (Bretschneider & Leimeister, 2017; Zhang & Chen, 2019; Alegre & Moleskis, 2021), while risk remains an important cost factor (Zhao et al., 2017; Yang et al., 2019). Nevertheless, knowledge remains limited regarding the interplay between benefits and costs and their impact on individuals' decisions to invest in agricultural projects (Li et al., 2020; Pratiwi, 2023).

Meanwhile, a current topic of interest in the literature is the dynamics of pure altruism and warm-glow giving in shaping prosocial behaviors, including individuals' support for agricultural crowdfunding initiatives. Scholars debated whether pure altruistic motives primarily drove prosocial behaviors or if egoistic factors also motivated such behaviors (Batson, 1987; Andreoni, 1990; André et al., 2017). They argue that individuals motivated by pure altruism may engage in prosocial behaviors that promote the well-being of others without seeking any personal benefits or gains. However, these individuals may also experience positive emotions, such as satisfaction, pleasure, and social recognition, from manifesting such behaviors (Evren & Minardi, 2017). Andreoni (1989) referred to this emotional utility as "warm-glow giving" and has predicted prosocial and environmental behaviors (Mayo & Tinsley, 2009; Hartmann et al., 2017). Crowdfunding closely resembles prosocial behavior (Pietraszkiewicz et al., 2017; Cox et al., 2018), and prior research indicates that pure altruism plays a significant role in shaping individuals' funding behavior toward legitimate crowdfunding projects with significant social implications (Alegre & Moleskis, 2021; Chen et al., 2021). However, it is worth noting that the impact of warm glow has been overlooked in the crowdfunding literature (Hörisch & Tenner, 2020; Xu et al., 2022), more specifically on agricultural crowdlending surmised of having both a for-profit and prosocial orientation.

Therefore, in a nutshell, the study utilizes social exchange theory (SET) and relevant literature to investigate factors shaping individuals' funding intentions toward agricultural crowdlending projects, which has received very little attention in the literature (Li et al., 2020; Azganin et al., 2021; Ljumović et al., 2021; Pratiwi, 2023). There is a scarcity of studies investigating the characteristics and motivations of crowdfunding in the agribusiness context (Kragt et al., 2021), particularly in developing countries (Pratiwi,

2023). Agricultural crowdfunding holds significant potential in these regions, as it addresses the challenges farmers face in accessing traditional financial institutions. Banks often perceive farmers as risky and costly, citing limited collateral, lack of official credit histories, and their dispersion across rural areas as barriers (Pratiwi, 2023). Agricultural crowdfunding offers solutions to these challenges, enabling farmers to directly access funds from individual investors.

Du (2024) stressed that investing in agriculture is considered risky due to price uncertainty, stemming from the inherent volatility of agricultural products. The authors added that the unique geographical, seasonal, and cyclical nature of agricultural production necessitates that agri-food crowdfunding projects be financed swiftly, thus requiring the active participation of backers. Unlike typical reward-based crowdfunding, agricultural crowdfunding projects are highly uncontrollable in terms of product quality and are vulnerable to environmental influences (Du, 2024).

Filimonova et al. (2019) argue that the peculiarities of projects on crowdfunding platforms lead to varying factors affecting project financing. While the literature extensively explores the roles of returns, risk, and prosocial factors such as altruism and warm glow in crowdfunding, in general, validating these in the context of agricultural crowdfunding is crucial for contributing new insights to the crowdfunding literature. This distinct form of crowdfunding provides tangible returns, involves longer investment periods based on cropping cycles, creates social impact, and is exposed to risks associated with weather, disease, and market fluctuations.

Therefore, this study primarily aims to identify the key motivations influencing funding intentions for agricultural projects in a developing country context. It focuses on the impact of financial gains, perceived risk, prosocial factors such as altruism and warm glow giving, and herding behavior on funding intentions. Additionally, it explores the moderating role of climate change beliefs on motivation-behavior relationships. The study expands the crowdfunding literature by exploring prosocial antecedents, explicitly delving into the dynamics between pure altruism and a warm glow in shaping funding intentions, which has also been a topic of fundamental debate among scholars in social psychology and the prosocial behavior domains (André et al., 2017). In contrast to previous studies on crowdfunding behavior, which have predominantly focused on intrinsic and extrinsic motivations (Bretschneider & Leimeister, 2017; Bagheri et al., 2019; Kim et al., 2020; Chen et al., 2021; Martínez-Climent et al., 2021; Baber & Fanea-Ivanovici, 2023), and the influence of platform and campaign characteristics (Zhao et al., 2017; Wang & Yang, 2019; Chen et al., 2021; Ferrer et al., 2023), this study breaks new ground by exploring the moderating role of climate change beliefs. In particular, the work explores the role of climate change beliefs in moderating individuals' benefit and cost perceptions toward funding agricultural projects and, ultimately, their funding intentions. Climate change is a pressing global issue, and the agriculture sector is one of the most vulnerable to climate change impacts. Examining the influence of climate change beliefs on agricultural crowdfunding participation can provide valuable insights for devising business strategies to increase its adoption. Ultimately, this study enriches the crowdfunding literature by exploring the key motivations and funding intentions specific to agricultural projects in developing countries. Agricultural crowdfunding is distinct from other forms of crowdfunding due to its unique challenges, including the volatility of agricultural products, product quality issues, significant social impact on developing communities, and environmental risks. Furthermore, the platform's ability to assist farmers with diverse risk mitigation techniques can pave the way for minimizing the negative impacts of climate change on the agriculture industry, food security, and society. Platform providers can also support farmers in the adoption of sustainable agriculture practices, which are crucial for ensuring the long-term viability of agricultural systems.

Literature review and hypotheses development

Factors driving crowdfunding participation: insights from the literature

Several studies have delved into the behavioral factors that prompt individuals to partake in crowdfunding activities. A succinct overview of the extant theoretical perspectives and empirical discoveries in the crowdfunding literature is outlined in Table 1. It shows that existing studies have explored funding behaviors and underlying predictors on various crowdfunding types, such as charity-based,

Table 1. Factors driving crowdfunding participation: insights from the literature.

| Factor | Description | Impact on crowdfunding behavior | Crowdfunding context applied | Source |
|--------------------------|---|--|---|--|
| Platform characteristics | The features of the crowdfunding platform, such as ease of use, communication quality, and transparency, affect backers' confidence and engagement. | Platforms that communicate effectively and are user-friendly create a positive environment for backers, increasing their likelihood to contribute. | Crowdlending for renewable energy projects | (Ferrer et al., 2023) |
| Campaign characteristics | Elements of the campaign, including media coverage, the attractiveness of the idea, and the framing (altruistic, egoistic, or environmental), are critical in influencing backer decisions. | Campaigns that receive positive media attention and present themselves as altruistic or socially beneficial tend to garner more funding. | Reward-based crowdfunding | (Wang & Yang, 2019; Munim et al., 2021; Nielsen & Binder, 2021) |
| Brand association | The mental connections or cognitive links that backers have with a crowdfunding brand. | When backers identify with or respect the brand associated with crowdfunding, they are more inclined to contribute due to personal connection and involvement. | Non-investment-based crowdfunding | (Fortezza et al., 2023) |
| Intrinsic motivations | The internal drive or desire to engage in crowdfunding for personal reasons rather than for some external reward or pressure. | Backers with high intrinsic motivation contribute because they believe in the cause or find personal fulfillment in supporting the campaign. | Film and web series crowdfunding Charitable crowdfunding Crowdfunding related to sustainable development Reward-based crowdfunding Tourism crowdfunding | (Bretschneider & Leimeister, 2017; Zhao et al., 2017; Bagheri et al., 2019; Shneor & Munim, 2019; Yang et al., 2019; Zhang et al., 2019; Zhang & Chen, 2019; Kim et al., 2020; Chen et al., 2021; Baber & Fanea-Ivanovici, 2023) |
| Extrinsic motivations | Motivation is fueled by external factors like social influence, perceived benefits, and other external validation. | Social pressures, external rewards, or the need for validation sway backers influenced by extrinsic motivation. | Film and web series crowdfunding Charitable crowdfunding Crowdlending Tourism crowdfunding | (Bagheri et al., 2019; Shneor & Munim, 2019; Zhang et al., 2019; Chen et al., 2021; Jiao et al., 2021) |
| Risk and trust | The individual's assessment or subjective judgment of the potential negative outcomes or uncertainties associated with crowdfunding. | Perceived risk and distrust can deter backers from contributing to crowdfunded projects. | Crowdlending | (Yang et al., 2019; Kim et al., 2020; Martínez-Climent et al., 2021; Baber & Fanea-Ivanovici, 2023) |
| Altruism | The desire to help others or contribute to a greater cause, regardless of personal gain | Altruistic backers focus on the social impact of their contribution. | Equity-based crowdfunding | (Bretschneider & Leimeister, 2017; Bagheri et al., 2019; Zhang & Chen, 2019) |

reward-based, equity-based, and debt-based crowdfunding. Studies have also adopted a wide range of theories in explaining crowdfunding behavior. The prevalent approach is utilizing the theory of planned behavior or self-determination theory and developing novel conceptual frameworks that integrate insights from existing literature. A comprehensive analysis of the crowdfunding literature identifies several key factors influencing crowdfunding behavior. These include intrinsic motivations like personal satisfaction, self-worth, which shape an individual's willingness to participate in crowdfunding (Zhao et al., 2017; Bagheri et al., 2019; Rodriguez-Ricardo et al., 2019; Shneor & Munim, 2019; Chen et al., 2021; Kim & Petrick, 2021; Baber & Fanea-Ivanovici, 2023; Fortezza et al., 2023). Extrinsic motivations, such as reciprocity, social influence, financial returns, and herding behavior, significantly impact participation decisions (Bretschneider & Leimeister, 2017; Bagheri et al., 2019; Jiao et al., 2021; Martínez-Climent et al., 2021). Moreover, brand and campaign influence, involving brand pride, respect, innovativeness, engagement, and media coverage, plays a crucial role in attracting backers (Munim et al., 2021; Fortezza et al., 2023). Perceived trust and risk, including trust in the platform and perceived constraints, are vital

for backer participation (Rodriguez-Ricardo et al., 2019; Wang & Yang, 2019; Yang et al., 2019; Baber & Fanea-Ivanovici, 2023). Campaign characteristics, such as communication, project information, framing, and visual design, enhance appeal (Jiao et al., 2021; Nielsen & Binder, 2021; Ferrer et al., 2023). How these factors influence crowdfunding behavior is described in Table 1. Platform characteristics, such as user-friendliness, transparency, and effective communication, build backers' trust and confidence, making them more likely to contribute. Similarly, campaign characteristics like positive media attention and framing (e.g. altruistic or innovative) can attract backers by aligning with their personal values or interests. The brand association also plays a role, as backers with strong emotional or cognitive connections to a brand tend to engage more readily. Intrinsic motivations, such as personal fulfillment or belief in the cause, drive backers to support projects without expecting external rewards. In contrast, extrinsic motivations—including social influence, rewards, and external validation—encourage backers to contribute when they seek benefits or peer approval. Risk and trust are also crucial; low perceived risk and high trust in the campaign or platform make backers more comfortable investing in projects. Finally, altruism motivates backers to support socially impactful or charitable projects, driven by a desire to contribute to the greater good. These factors collectively shape backer behavior by leveraging a combination of internal values and external influences.

This suggests that the behavioral antecedents shaping funding intentions in crowdlending platforms, particularly for agricultural projects, remain underexplored. Likewise, evaluating behaviors in agricultural crowdfunding is distinctive as it encompasses both prosocial and for-profit motives and thus could be further explained beyond the risk-reward tradeoff.

Social exchange theory

Social exchange theory, or SET, offers unique insights that make it particularly relevant for studying crowdfunding behavior. SET theorizes that human exchange relationships are driven by basic economic principles around rewards and costs (St John et al., 2021). Parties involved will rationally weigh the gains and costs of the transaction before willingness and exchange behavior transpires. SET is conceptualized from economic and socio-emotional perspectives, yet it has been complemented and extended by many scholars in sociology, psychology, management, marketing, and other fields. It has accurately assessed the causes and consequences of individuals' perceptions, attitudes, and behaviors in diverse contexts (Boateng et al., 2019). The theory is pertinent in crowdfunding as individuals (i.e. backers) ponder the tangible, intangible, and costs associated with a project, making decisions and pursuing actions offering the highest benefits (Zhao et al., 2017; Yang et al., 2019; Alegre & Moleskis, 2021). Backers and project creators engage in social exchanges by offering and receiving rewards while accounting for costs. Participation decisions may be influenced by financial returns, social recognition, emotional satisfaction, perceived risks, or merely selfless reasons.

Expected financial gains (FIN) and funding intentions (INT)

Crowdfunding has opened opportunities for entrepreneurs seeking economic support and investors seeking financial benefits (De Luca et al., 2019). Many scholars have pointed out that individuals' motivations to invest in crowdfunding platforms espouse expectations of financial gains. Cecere et al. (2017) claim that monetary incentives crowd out intrinsic motivations. Yang et al. (2019) also assert that backers' financial expectations positively affect their behavioral intentions to support a crowdfunded project. Therefore, individuals expect to benefit from the social exchange; thus, if they believe in the possibility of obtaining financial benefits from supporting a crowdfunding venture, funding behavior likely transpires (Ordanini et al., 2011). Thus, it is hypothesized that:

H1: Expected financial gains positively relates to the intention to fund agricultural projects

Perceived risk (RISK) and funding intentions (INT)

Perceived risks refer to the subjective assessment of losses associated with the exchange (Featherman & Pavlou, 2003) and have been reported as an important predictor of crowdfunding participation.

Crowdfunding risks include the possibility of experiencing financial loss, lengthy repayment periods, unsatisfactory project outcomes, psychological impacts (e.g. stress, anxiety, and disappointment) associated with the inability to receive returns or benefits, and negative effects on investor self-esteem caused by failed crowdfunding projects (Yang et al., 2019; Tseng, 2020; Wasiuzzaman et al., 2022; Adhami et al., 2023). These risks may also transpire in investing decisions toward agricultural crowdfunding projects. Potential investors may worry about the possibility of experiencing financial losses or not receiving expected returns/benefits. The level of experience and expertise of the farmers involved in the project, the quality of farming equipment and infrastructure, and the availability of adequate pest and disease prevention measures are also relevant concerns. Adding to this also relates to the length of time it takes to receive repayment of the principal amount, as agricultural projects often have long gestation periods before producing harvestable crops. Weather patterns and climate change can also threaten the success of farming activities leading to the potential for crop failure. Therefore, it is postulated that when individuals perceive a high risk associated with agricultural crowdfunding projects, they may become less likely to invest their money.

H2: Perceived risk negatively relates to the intention to fund agricultural projects

Prosociality of crowdfunding behavior: altruism or warm-glow driven

Altruism (ALT) and funding intentions (INT)

Scholars have tried to extend the theoretical explanations of selfish or selfless behaviors (Batson, 1987), but relatively little is known about their role as drivers in crowdfunding (Bretschneider & Leimeister, 2017). Alegre and Moleskis (2021) argue that individuals' project support decisions go beyond mere potential benefits. St. John et al. (2021) underscores that investors' traditional economic motivations do not apply to crowdfunding as they are participatory actors in the crowdfunding venture (St John et al., 2021). Quantitative evidence shows that altruism is an important funding motivation because backers tend to invest in crowdfunding to contribute to a project with similar interests, help others, or support a legitimate cause (Giudici et al., 2018). Altruism is a form of unconditional kindness (Fehr & Gächter, 2000), and social and nonprofit crowdfunding ventures have a higher chance of financing for altruistic reasons (Moritz & Block, 2014). Therefore, it is hypothesized that:

H3: Altruism positively relates to the intention to fund agricultural projects

Warm-glow giving (WARM) and funding intentions (INT)

Andreoni (1989) introduced the concept of "warm-glow giving" as an impure altruistic motive, centering on emotional rewards (i.e. joy and satisfaction) of helping others. Various studies have consistently supported the warm glow's motivational effect (Galak et al., 2011; Hu et al., 2015; Cumming et al., 2020). In crowdfunding, Kuppuswamy and Bayus (2017) theorized that warm-glow intrinsic motives from giving to a cause or the perception of belonging to a bigger social initiative draw backers to participate in crowdfunding ventures. Lenders consider not only investment factors but also prosocial factors, such as the anticipation of emotional self-satisfaction or a warm glow, in their funding decisions (Paula et al., 2021). Adamska-mieruszewska et al. (2024) similarly assert that crowdfunding for green projects, characterized by uncertainty and modest funding goals, can increase backers' well-being through the warm-glow experience. A warm glow feeling maximizes the giver's self-esteem (Allison et al., 2013). Hörisch and Tenner (2020) and Tenner and Jacob (2021) support this by noting that motivations to fund sustainable projects are shaped by both altruistic (selfless) and egoistic (warm-glow) factors. Sutanto et al. (2021) also suggest that the desire to gain personal internal rewards can determine the contribution level in crowdfunding projects.

Investigating the role of warm glow is essential, as existing studies mainly focus on its impact on charitable giving without financial return (Hörisch & Tenner, 2020). Funding motivations vary depending on the nature of the projects; agricultural and public welfare projects tend to be driven more by intrinsic motivations (Bürger & Kleinert, 2021; Fang, 2022). Warm glow can potentially motivate backers due to

the positive feelings generated from supporting sustainable development projects, especially those with prosocial goals (Gleasure and Feller, 2016; Hörisch & Tenner, 2020). This phenomenon is particularly relevant in developing countries with higher poverty levels. Projects aimed at poverty alleviation often attract funding driven by charitable motivations rather than financial returns. Xing et al. (2024) suggest that warm glow can explain the success of reward-based poverty alleviation crowdfunding projects in impoverished regions.

Given the contentions from the extant literature, the role of warm-glow giving is explored in the study as a driver of consumers' intentions to fund agricultural crowdfunding projects. The study hypothesizes that:

H4: Warm glow-giving positively relates to the intention to fund agricultural projects

Herding (HERD) and funding intentions (INT)

Experts strongly influence other people's contributions to online exchanges like crowdfunding (Kim & Viswanathan, 2018). Lin et al. (2014) also concluded that the number of prior contributions could serve as a quality signal for future contributors. Rational contributors consider previous decisions as rational quality signals, shaping their future decisions and behaviors. Meanwhile, Colombo et al. (2015) state that potential investors may consider the number of early contributors or experts' opinions as a sign of certainty and good performance. Petit and Wirtz (2022) denote this act of imitating others' behavior as "herding." Customers do not want to take risks and search to maximize profits; thus, they may consider previous opinions regarding a determined crowdfunding project to reduce uncertainty and guarantee profitability (Zvilichovsky et al., 2018). Previous studies have empirically supported the effect of herding on crowdfunding participation (Kim & Petrick, 2021; Petit & Wirtz, 2022). Therefore, the study hypothesizes that:

H5: Herding positively relates to the intention to fund agricultural projects

Climate change beliefs (CCB) and funding intentions (INT)

Climate change belief (CCB) refers to an individual's awareness of climate change and its impacts (Dang et al., 2014; Hyland et al., 2016). Occurrences of extreme weather events, floods, rising temperatures, and weather variabilities have been more frequent, which have affected different facets of human life, including key industries that support the world's economy. Especially in the agriculture sector, the World Bank (2021) claims that climate change threatens crop yields and reduces food quality, which further challenges food security. Without adaptation and mitigation measures, risk in agricultural production inflates. More so in many less-developed countries where the agriculture sector holds a prominent role, limited capital constraints smallholder farmers from exploring and realizing risk mitigation strategies (Kragt et al., 2021).

Prior studies have accounted for the influence of climate change beliefs on people's risk perception, adaptation, mitigation, and climate-friendly behaviors (Azadi et al., 2019; Kim & Hall, 2019; Stoknes et al., 2021). Vainio & Paloniemi (2013) assert that belief in climate change is associated with people's willingness to take action. Moreover, Chen (2020) argues that belief in climate change is a necessary condition for engaging in pro-environmental behaviors. According to Hornsey et al. (2016), individuals who are more aware of the dangers of climate change are more likely to adopt precautionary measures.

Despite these findings, the role of climate change belief as a moderating factor in the relationship between backers' motivation and crowdfunding intention towards agricultural projects has not been explored. The literature claims and discusses how beliefs can moderate motivation-behavior relationships. For instance, Dang et al. (2022) argue that consumers exhibit stronger motivation and purchase intentions towards organic products when they have strong beliefs about the corporate social responsibility (CSR) activities of food retailers. Similarly, Chen (2020) demonstrates that climate change skepticism

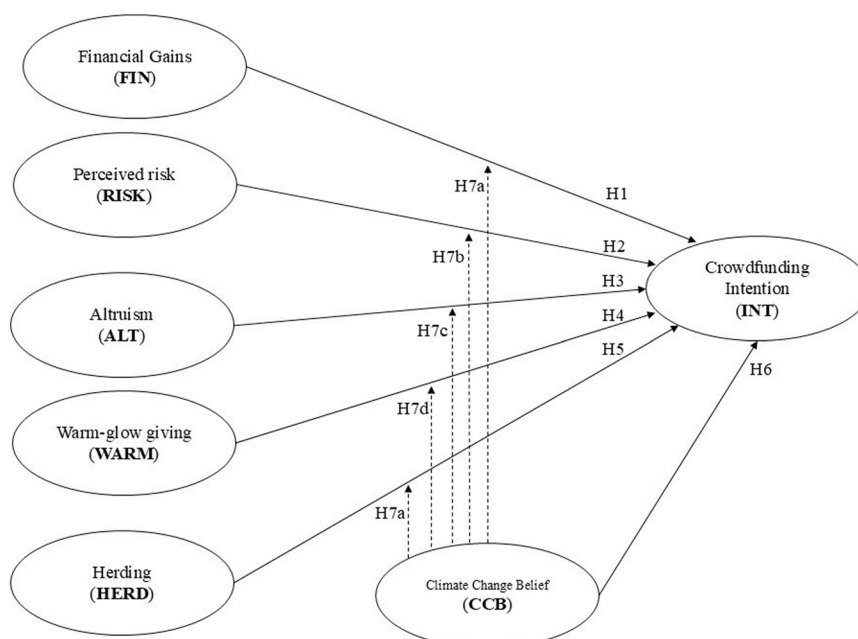


Figure 1. The Research Model (Source: Derived from the author's own analysis).

(disbelief) can moderate the impact of an individual's sustainability self-identity on their purchase intention towards sustainability-labeled coffee.

In the context of agricultural crowdfunding, understanding how beliefs about climate change influence funding motivation and behavior is crucial. If potential backers believe in the detrimental effects of climate change on agriculture, their motivation to fund agricultural projects may be diminished due to perceived risks and uncertainties. As Bradley et al. (2020) emphasized, belief in climate change prompts a consideration of the risks associated with specific actions. People who strongly believe in climate change and its impact will be more careful in evaluating projects that are negatively affected by climate change. The exposure of agriculture to climate change risk could potentially lead to aversive decisions. Taken altogether, the strength of relationships between crowdfunding intentions and its selected predictors may change, owing to the level of climate change belief; therefore, the study postulates the following:

H6: Climate change belief positively relates to the intention to fund agricultural projects

H7a: The relationship between expected financial gains and funding intention is moderated by climate change belief, such that the becomes weaker when climate change belief is high

H7b: The relationship between perceived risk and funding intention is moderated by climate change belief, such that the becomes stronger when climate change belief is high

H7c: The relationship between altruism and funding intention is moderated by climate change belief, such that the becomes weaker when climate change belief is high

H7d: The relationship between warm-glow giving and funding intention is moderated by climate change belief, such that the becomes weaker when climate change belief is high

H7e: The relationship between herding and funding intention is moderated by climate change belief, such that the becomes weaker when climate change belief is high

Figure 1 reflects the study's model specification, succeeding from the insights in the literature and postulations of this study.

Methodology

Study participants

The population frame for the study was adult individuals in the Philippines, specifically targeting Millennials and Gen Z cohorts with prior experience as backers in crowdfunding initiatives. Millennials

and Gen Z cohorts were primarily targeted, as the extant literature considers them as prime drivers of disruptive sharing economy models, including crowdfunding (Bernardino & Santos, 2020; Chandler et al., 2021). The cohort groups are highly tech-savvy and highly exposed to online platforms, making crowdfunding an accessible and appealing option.

A convenience sampling method was employed, with the online survey distributed through private messages and posts on social media platforms such as Facebook, Instagram, and LinkedIn. Prequalifying questions were included to ensure respondents had awareness and prior experience with agricultural crowdfunding platforms. Respondents who lacked awareness or experience with crowdfunding platforms, who were not Filipino, and who did not belong to the Millennial or Gen Z cohorts were disqualified from proceeding with the survey. This approach ensures that the data collected is both reliable and valid, as participants have direct experience with crowdfunding, making their responses more relevant and accurate.

Approximately 400 potential respondents were initially contacted to participate in the survey, but only 270 met the screening criteria and completed the survey, resulting in a response rate of 68%. After thorough data cleaning, only 257 responses were deemed valid for analysis. This process involved excluding incomplete questionnaires, responses with significant missing data, and unengaged responses, which were identified by patterns such as straight-line answering or inconsistent answers.

Although it is recognized that there are limitations to using a nonprobabilistic sample, it was appropriate for this study, which aimed for analytic rather than population-based generalization (Polit & Beck, 2010; Kwarteng et al., 2023). Furthermore, considering the study's focus on initial theory testing, convenience samples can still be effective (Ashraf & Merunka, 2017), with the understanding that future research should validate the findings using a more representative and diverse sample.

Moreover, the study sample was secured in the Philippines as it is primarily an agricultural country (Statista Research Department, 2022). Notably, several crowdfunding platforms (e.g. Cropital, FarmOn, and Upbuilds) have emerged in the country as an alternative form of financing for agricultural ventures (The Philippine Star, 2019). Furthermore, farming activities and crop performance face high vulnerability to climate change risk (Chandra et al., 2017) and frequent exposure to extreme weather events; climate anxiety levels are high among Filipinos (Hickman et al., 2021). Studies have also shown that educational attainment is a strong predictor of climate change belief (Hornsey et al., 2016; Ballew et al., 2020). This association could be particularly relevant in the study sample, composed mostly of college graduates. It is posited that the sample is likely more aware of climate change and its negative impacts, especially in the agricultural sector. They may be more concerned about activities affected by climate change, such as agricultural crowdfunding, due to the potential risks and challenges posed by climate change on agricultural productivity and performance.

About 257 responses were useful for further analysis, which was deemed acceptable following heuristics ($n=60$) (Hair Jr et al., 2017, p. 24) and statistical assessments using G*power software ($n=98$) (Faul et al., 2007). The demographic profile of the respondents is presented in Table 2.

Research ethics

This study adhered to the principles outlined in the Declaration of Helsinki and complied with the Republic Act No. 10173, also known as the Data Privacy Act of 2012 of the Philippines. Ethical approval was secured from the author's affiliated institution the Visayas State University. The dataset and pertinent ethical documentation are accessible upon request. Informed consent was obtained electronically from all study participants through an online consent form, which provided detailed information about the study's purpose, procedures, risks, and benefits. Participants were required to read and acknowledge the form by clicking to indicate consent before proceeding with their involvement in the study.

Questionnaire development

An online survey questionnaire was prepared and comprised of three parts: (1) a consent form and a brief description of agricultural crowdfunding, (2) measures of funding intentions and other predictor variables,

Table 2. Respondents' profile.

| Variable | Category | Frequency | (%) |
|------------------------|---------------------|-------------|-------|
| Gender | Male | 77 | 30.00 |
| | Female | 169 | 65.80 |
| | I prefer not to say | 11 | 4.30 |
| Marital status | Single | 181 | 70.40 |
| | Married | 72 | 28.00 |
| | Widowed | 1 | 0.40 |
| | Separated | 3 | 1.20 |
| | High school degree | 16 | 6.20 |
| Educational attainment | College degree | 195 | 75.90 |
| | Master's degree | 38 | 14.80 |
| | Doctoral degree | 8 | 3.10 |
| | 18–25 | 110 | 42.80 |
| Age | 26–30 | 72 | 28.00 |
| | 31–40 | 41 | 16.00 |
| | 41–50 | 13 | 5.10 |
| | 51 and above | 21 | 8.20 |
| | Monthly income | Below \$300 | 93 |
| \$301–\$500 | | 90 | 35.00 |
| \$501–\$1000 | | 62 | 24.10 |
| \$1001–\$4000 | | 12 | 4.70 |
| Employment | | Employed | 220 |
| | Self-employed | 37 | 14.40 |
| Work experience | Less than 1 year | 24 | 9.30 |
| | 1–3 years | 112 | 43.60 |
| | 4–6 years | 63 | 24.50 |
| | 7–9 years | 15 | 5.80 |
| | 10–12 years | 8 | 3.10 |
| | More than 12 years | 35 | 13.60 |

and (3) socio-demographic information about the respondents. Items measuring the dependent and independent variables were adapted from multiple sources and fitted into the study context: INT (Algesheimer et al., 2005; Shneur & Munim, 2019), FIN (Bretschneider & Leimeister, 2017; Gerber & Hui, 2013), ALT (Bretschneider & Leimeister, 2017; Konrath & Handy, 2018), WARM (Hartmann et al., 2017; Konrath & Handy, 2018), RISK (Yang et al., 2019), HERD (Bretschneider & Leimeister, 2017) and CCB (Azadi et al., 2019). A 5-point Likert scale (1 – strongly disagree to 5 – strongly agree) was used to measure the items. Before distribution, a marketing professor with expertise in consumer behavior research was consulted to check the draft questionnaire. Then, it was pre-tested for at least 15 marketing students. Open-ended questions designed to gather additional data from respondents were removed, as respondents indicated that these questions made the questionnaire longer, required significant effort to answer, and could reduce the motivation of intended respondents to complete the primary survey items. Additionally, terms considered complex for the target participants, such as "non-monetary rewards" and "equity," were simplified.

Assessment of common method bias

Controlling for CMB in studies adopting survey data collection methods is integral as its presence threatens the reliability and validity of the empirical results (Kock et al., 2021). The study adopted procedural controls and performed statistical assessments to address CMB issues (Kock et al., 2021). The procedural controls include: (1) adapting items to measure variables from various sources, (2) giving clear instructions and ensuring clarity of question items, and (3) separating measures of dependent and independent variables in the questionnaire. Meanwhile, statistical assessment using Harman's single-factor test indicated a cumulative variance of 41.42% for the first factor extracted. CMB is therefore ruled out as the figure is below the 50% threshold (Podsakoff et al., 2003). In addition, the Gaussian copula function in SmartPLS 4 was used to test for endogeneity in the model. However, the analysis showed no significant copulas, effectively dismissing any endogeneity concerns (Hult et al., 2018).

Data analysis

The study employed PLS-SEM over its covariance-based counterpart due to the exploratory nature of the research, the complexity of our theoretical model with embedded moderation effects (i.e. climate change

beliefs on funding intentions and its predictors), the small sample size, and the non-normal distribution of our data (Hair Jr et al., 2017; Dash & Paul, 2021). PLS-SEM to offer better statistical power and predictive capability given these circumstances.

Results

The measurement model assessment

Items exhibiting satisfactory indicator reliability with factor loadings above 0.70 were retained (Hair Jr et al., 2017), while those with lower values were dropped (Table 3). Further assessment reveals that the

Table 3. Construct reliability and validity.

| Items | | Loadings | CA | CR | AVE |
|------------------------------|---|----------|-------|-------|-------|
| Crowdfunding intention (INT) | | | | | |
| INT1 | Given the chance, I intend to financially contribute to agricultural crowdfunding campaigns. | 0.905 | 0.915 | 0.940 | 0.797 |
| INT2 | It is likely that I will financially contribute to agricultural crowdfunding projects in the near future. | 0.881 | | | |
| INT3 | I have the intention to financially contribute to agricultural crowdfunding campaigns. | 0.907 | | | |
| INT4 | Given the chance, I predict that I would financially contribute to "agri-based" crowdfunding projects in the near future. | 0.878 | | | |
| Financial gains (FIN) | | | | | |
| FIN1 | I contribute to agricultural crowdfunding campaigns to get a monetary incentive | 0.841 | 0.888 | 0.920 | 0.743 |
| FIN2 | I prefer making profit by investing my money on crowdfunding projects than keeping a savings account | 0.847 | | | |
| FIN3 | My primary goal is to generate return on crowdfunding investment. | 0.864 | | | |
| FIN4 | I will engage in some of the projects on agri-based crowdfunding platform in prospect of financial returns | 0.895 | | | |
| Altruism (ALT) | | | | | |
| ALT1 | I contribute to agricultural crowdfunding campaigns because I feel compassion toward the farmers in need | 0.902 | 0.870 | 0.912 | 0.721 |
| ALT2 | People should be willing to help farmers who are less fortunate. | 0.824 | | | |
| ALT3 | I pledge funds in agricultural crowdfunding projects because I am concerned about those less fortunate farmers than myself. | 0.871 | | | |
| ALT4 | I want to help farmers through crowdfunding without expecting any compensation | 0.795 | | | |
| Warm-glow giving (WARM) | | | | | |
| WARM1 | Supporting an agricultural crowdfunding project gives me a pleasant feeling of personal satisfaction | 0.845 | 0.877 | 0.924 | 0.802 |
| WARM2 | I feel happy contributing financial resources to support farming | 0.915 | | | |
| WARM3 | I feel pleased to be doing something good for farmers such as through crowdfunding | 0.924 | | | |
| WARM4 | Pledging funds in agricultural crowdfunding campaigns makes me feel satisfied | d | | | |
| WARM5 | Contributing money to agricultural crowdfunding projects enables me to obtain recognition. | d | | | |
| Perceived risk (RISK) | | | | | |
| RISK1 | I am worried that there will be a financial loss and I cannot receive returns/benefits from crowdfunding projects | 0.912 | 0.838 | 0.924 | 0.859 |
| RISK2 | I am worried that it will take a long time to receive the repayment for my investment | 0.942 | | | |
| RISK3 | I am worried that the quality of the crowdfunding project cannot meet the expectations | d | | | |
| RISK4 | I am worried that my self-esteem will be negatively affected when the crowdfunded projects fail to achieve their goals | d | | | |
| Herding (HERD) | | | | | |
| HERD1 | I give money to a project that many others have already invested in | 0.891 | 0.783 | 0.868 | 0.689 |
| HERD2 | I follow others in deciding whether or not to contribute to a project | 0.701 | | | |
| HERD3 | I would invest in a project because many other backers have already contributed to it | 0.885 | | | |
| Climate Change Beliefs (CCB) | | | | | |
| CCB1 | I believe that weather conditions have changed (precipitation and temperature) compared to the past | 0.903 | 0.910 | 0.937 | 0.789 |
| CCB2 | I believe that more drought, dust, and other unusual weather events have occurred in recent years. | 0.893 | | | |
| CCB3 | I believe that the dry season in recent years has come sooner than in the past. | 0.828 | | | |
| CCB4 | I am sure global warming is taking place | 0.926 | | | |

Note. CA: Cronbach's alpha; CR: composite reliability; AVE: average variance extracted; d: item dropped.

Table 4. Discriminant validity assessment using the Fornell-Larcker criterion.

| | ALT | CCB | FIN | HERD | INT | RISK | WARM |
|------|--------------|--------------|--------------|-------------|--------------|--------------|--------------|
| ALT | 0.849 | | | | | | |
| CCB | 0.529 | 0.888 | | | | | |
| FIN | 0.287 | 0.329 | 0.862 | | | | |
| HERD | 0.392 | 0.253 | 0.383 | 0.83 | | | |
| INT | 0.708 | 0.449 | 0.305 | 0.491 | 0.893 | | |
| RISK | -0.104 | 0.074 | 0.489 | 0.076 | -0.096 | 0.927 | |
| WARM | 0.837 | 0.541 | 0.385 | 0.388 | 0.716 | -0.013 | 0.895 |

Note. Square root of AVE (in bold) on diagonal.

Table 5. Structural model assessment.

| | β | t-value | p-value | Confidence interval | | Remark |
|--|----------|------------------|---------|---------------------|-------------------|---------------------|
| | | | | 2.5% | 97.5% | |
| Direct effects | | | | | | |
| FIN → INT | 0.028 | 0.505 | 0.614 | -0.078 | 0.144 | H1 – Not supported |
| RISK → INT | -0.104 | 1.906 | 0.057 | -0.210 | 0.005 | H2 – Not supported |
| ALT → INT | 0.345*** | 4.067 | 0.000 | 0.194 | 0.526 | H3 – Supported |
| WARM → INT | 0.345*** | 4.265 | 0.000 | 0.175 | 0.492 | H4 – Supported |
| HERD → INT | 0.234*** | 4.082 | 0.000 | 0.113 | 0.340 | H5 – Supported |
| CCB → INT | 0.042 | 0.721 | 0.471 | -0.073 | 0.157 | H6 – Not supported |
| Moderating Effects | | | | | | |
| CCB*FIN → INT | 0.193** | 2.888 | 0.004 | 0.036 | 0.299 | H7a – Supported |
| CCB*RISK → INT | -0.021 | 0.358 | 0.720 | -0.126 | 0.109 | H7b – Not supported |
| CCB*ALT → INT | -0.253* | 2.277 | 0.023 | -0.481 | -0.043 | H7c – Supported |
| CCB*WARM → INT | 0.245* | 2.260 | 0.024 | 0.042 | 0.467 | H7d – Supported |
| CCB*HERD → INT | -0.114* | 1.985 | 0.047 | -0.196 | 0.033 | H7e – Supported |
| Assessment | | | | | | |
| Coefficient of determination (R^2) | | | 0.656 | | | |
| Predictive relevance (Q^2) | | | 0.498 | | | |
| PLS-predict assessment of the endogenous variables | | | | | | |
| | PLS | | | LM | PLS-SEM – LM RMSE | |
| | RMSE | $Q^2_{-predict}$ | RMSE | $Q^2_{-predict}$ | | |
| INT1 | 0.634 | 0.483 | 0.665 | 0.432 | -0.202 | |
| INT4 | 0.604 | 0.467 | 0.653 | 0.377 | -0.227 | |
| INT2 | 0.605 | 0.477 | 0.635 | 0.424 | -0.181 | |
| INT3 | 0.623 | 0.484 | 0.658 | 0.424 | -0.199 | |

Note. β = regression coefficient; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; FIN: Financial Gains; RISK: Perceived risk; ALT: Altruism; WARM: warm glow; HERD: herding; CCB: climate change belief.

constructs exhibit sufficient reliability. Cronbach's alpha (CA) and composite reliability (CR) scores satisfy prescribed thresholds of 0.70–0.90 and 0.70, respectively (Hair Jr et al., 2017). Average variance extracted (AVE) scores are also above 0.50, which indicates that the constructs exhibit good convergent validity (Hair Jr et al., 2017). Meanwhile, the discriminant validity of the constructs is also achieved based on the Fornell-Larcker criterion, as the square root of AVE of each construct is higher than its correlation with other constructs (Fornell & Larcker, 1981; Hair Jr et al., 2017) (Table 4).

The structural model assessment

The structural model assessment proceeded as variance inflation factor (VIF) scores for the predictor variables fell below 3.0–3.3, thereby ruling out serious multicollinearity concerns (Hair Jr et al., 2017). Then, viewing the assessment results, it is revealed that the coefficient of determination (R^2) value of INT is 0.656, signifying that 65.6% of the variance of INT is explained by its set of predictors (i.e. FIN, ALT, WARM, RISK, HERD, and CCB).

A complete bootstrapping procedure with 5000 subsamples was carried out for hypothesis testing, with a predefined significance level (α) of 5%. As shown in Table 5, only ALT ($\beta = 0.345$, $t = 4.067$, $p < 0.01$), WARM ($\beta = 0.345$, $t = 4.265$, $p < 0.01$), HERD ($\beta = 0.234$, $t = 4.082$, $p < 0.01$) are found to positively affect INT, thereby supporting H3, H4, and H5. Furthermore, as for the test of moderating effects, the results show that CCB positively moderates FIN→INT ($\beta = 0.193$, $t = 2.888$, $p < 0.05$) and WARM→INT ($\beta = 0.245$, $t = 2.260$, $p < 0.05$) and negatively moderates ALT→INT ($\beta = -0.253$, $t = 2.277$, $p < 0.05$) and HERD→INT ($\beta = -0.114$, $t = 1.985$, $p < 0.05$) relationships. Therefore, H7a, H7c, H7d, and H7e are accepted. As shown in Figure 2, the simple slope analysis reveals that when CCB is high (1 standard deviation

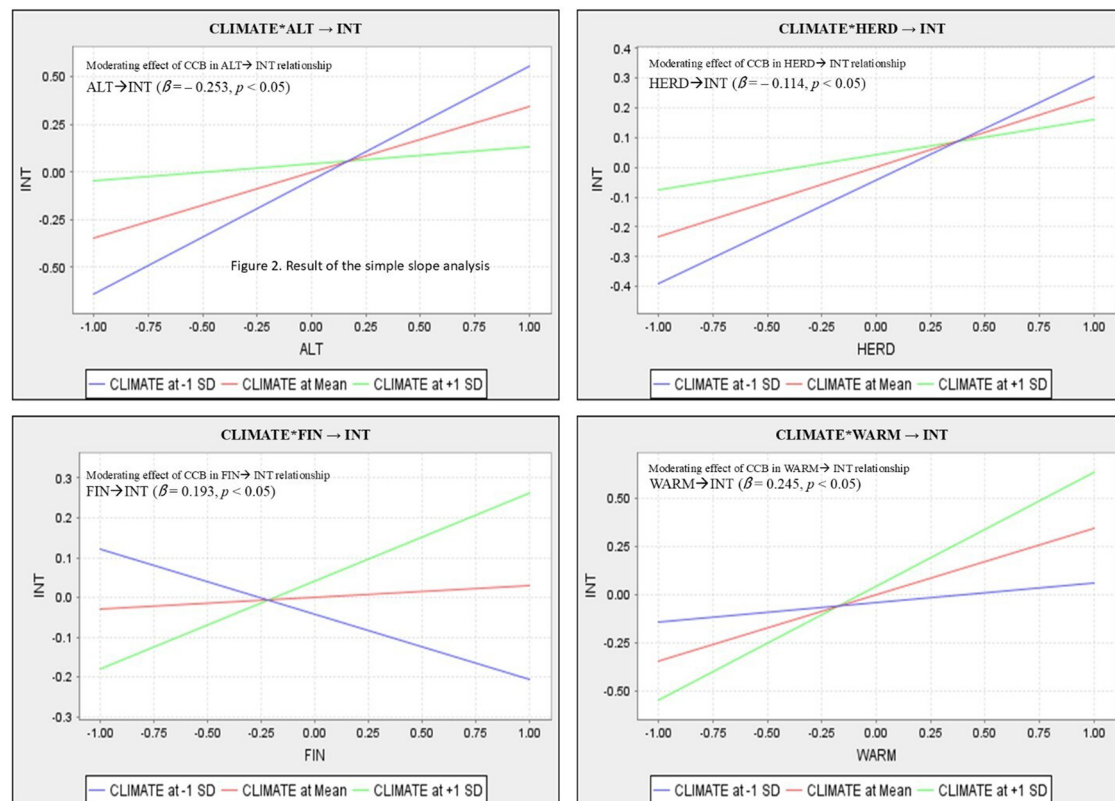


Figure 2. Result of the simple slope analysis (Source: derived from the author's own analysis).

above the mean), the positive relationships between FIN → INT, as well as between WARM → INT, are stronger compared to when CCB is low (1 standard deviation below the mean). Conversely, the relationships between ALT → INT and HERD → INT, are weaker when CCB is high (1 standard deviation above the mean) compared to when CCB is low. This indicates that higher CCB enhances the influence of financial and warm glow motivations on intention while diminishing the impact of altruism and herding motivations.

Moreover, PLS-predict ($Q^2_{predict}$) statistic values of the endogenous construct INT are also greater than zero. The prediction statistics of the PLS-SEM model and the naïve linear regression (LM) model were also contrasted based on root mean squared error (RMSE). The RMSE values in the PLS-SEM model are less than those of the LM benchmark model, signifying that the model exhibits sufficient predictive power (Shmueli et al., 2019; Leong et al., 2021) (Table 5).

Discussion and conclusion

The study anchors on the social exchange theory (SET) to examine the effect of financial gain expectations, warm-glow benefits, and risk perceptions on funding intentions. The study also introduces a unique integration into the social exchange theory (SET) framework, which specifically examines the influence of prosocial motives on funding intentions, with a focus on the interplay between selfless (altruistic) and selfish (warm-glow) reasons. Also, another novel feature of the study explores the role of climate change beliefs on funding intentions towards agricultural projects and its moderating impact mechanisms on the relationship between funding intentions and risk and rewards perceptions.

The study surprisingly revealed that financial gain expectations and risk perceptions did not significantly influence funding intentions. This opposes prior claims asserting that the monetary returns from crowdfunding influence backers' participation (Bretschneider & Leimeister, 2017; Yang et al., 2019; Alegre & Moleskis, 2021; Nielsen & Binder, 2021). Despite the for-profit orientation of agricultural crowdfunding, platform providers cannot always guarantee the repayment of principal and interest, particularly due to the inherent uncertainties and risks associated with agricultural projects. This lack of guarantee may

provide a plausible explanation for why financial gains are not always a significant driver of funding intentions in this context.

Another surprising finding challenges the commonly held notion of the pivotal role of perceived risk in crowdfunding behavior, which has been previously established in the literature (Yang et al., 2019; Wasiuzzaman et al., 2022). This may be attributed to the strongly prosocial nature of agricultural crowdfunding initiatives. Dai & Zhang (2019) indicate that uncertainty and risk perception often blur on prosocial-oriented projects as altruistic motivation transcends rational economic factors. Strategic risk evaluation is plausibly dimmed by the desire to help and improve the welfare of farmers and the positive social impacts the projects generate (Gafni et al., 2021).

Certainly, the study confirms the effect of altruism on funding intentions. This contends the traditional benefits-based view in evaluating funding decisions as unconditional kindness predominates funding intentions. This supports prior studies claiming the effect of altruism on crowdfunding behavior and the funding success of prosocially-oriented projects (Chen et al., 2021; Nakagawa & Kosaka, 2022). Another notable finding is the confluence of altruism and warm-glow giving in shaping funding intentions. While past studies isolate the effects of altruism and warm glow, the study shows that backing agricultural ventures could be marked as a genuine act of helping, yet emotionally rewarding feelings of warm glow could also drive it. Warm glow sentiments of joy and personal satisfaction are engrossed from supporting a good social cause (Allison et al., 2013; Hartmann et al., 2017). Therefore, the findings confirm prior claims on the role of warm glow sentiments in crowdfunding contributions (Hörisch & Tenner, 2020; Penz et al., 2022). Contrary to Cecere et al.'s (2017) claims, intrinsic motives like altruism and a warm glow could crowd out tangible reward expectations.

Furthermore, the role of herding on funding intentions is confirmed, corroborating previous study findings (Agrawal et al., 2015; Tian et al., 2021; Xiao et al., 2021). Herding mirrors Bindra et al. (2022) "bandwagon effect," describing an individual's propensity to adopt the viewpoints and behavior shared by the majority. Ding and Li (2019) denote herding as an informational social influence that triggers imitation behavior in uncertain decision scenarios. Therefore, investing in crowdfunding projects that other investors already fund fosters consumers' confidence and consequently shapes funding intentions.

Finally, a key study finding uncovers the moderating effects of climate change beliefs on the relationships between funding intentions and its predictors. Explicitly, high climate change beliefs strengthen the relationship between financial gains and crowdfunding intention. Additionally, these beliefs reinforce the connection between warm-glow giving and crowdfunding intention. It also strengthens the relationship between warm-glow giving and crowdfunding intention. However, it diminishes the influence of altruism and herding behavior on crowdfunding intention. This suggests that consumers are more likely to invest funds in agricultural projects based on financial and emotional reward prospects when they are more aware of climate change and its effects on agriculture. Rewards plausibly compensate for the risk that climate change might lodge in the agriculture sector. Meanwhile, as more emphasis is given to rewards with high climate change beliefs, it abates altruistic motives, and potential backers may follow less informational social signals on funding decisions.

Theoretical implications

The study contributes insights into the psychological and behavioral factors shaping potential backers' funding intentions, specifically on projects of an agricultural nature on crowdlending platforms. The study expands the crowdfunding literature and social exchange theory by stressing that funding motivations vary depending on the project type and socioeconomic conditions. This means that while traditional risk and reward factors play a role in crowdfunding decisions as espoused by the framework of social exchange theory, the study accents that when it comes to funding agricultural projects, less tangible motivations such as altruism and warm-glow play a significant role. Individuals who participate in agricultural crowdfunding may be motivated by a desire to help farmers, even if they do not expect to receive financial returns. Additionally, they may be motivated by the positive emotions they experience when supporting projects, which can provide a sense of fulfillment and purpose beyond financial gain. This finding also informs fundamental debates delineating pure altruism and warm glow-giving on prosocial behavior. In the context of this study, it shows the confluence of these motivations on funding intentions. Hence,

individuals' motivations for crowdfunding are not always straightforward and can involve a combination of selfless concern for others and the desire for personal satisfaction or fulfillment. These motivations can coexist and reinforce each other, with the desire to help others driving the decision to fund agricultural projects and the sense of fulfillment and satisfaction that comes with it. Most importantly, the study secures a pivotal understanding of climate change beliefs' role in funding decisions towards agricultural crowdfunding projects. Climate change beliefs demonstrate moderating effects, with high levels of such belief increasing expectations of financial and emotional reward and decreasing altruistic drives and herding effects.

Managerial implications

Strategies that evoke altruism and warm-glow-giving motivations among potential backers, like in the form of the prosocial narratives and framings associated with agricultural crowdfunding, are suggested. For instance, stories emphasizing farmers' socioeconomic challenges may induce empathy and shape altruism-driven backing behavior. Meanwhile, accounts from previously funded projects, precisely those that succeeded and generated positive social impacts, are important stories to convey to induce warm-glow sentiments. In addition, it remains relevant for crowdfunding platforms to highlight the project pledges and funding progress to initiate herding effects. Highlighting "repeat farmers" or those funded from previous cycles could also send informational signals that influence the behavior of potential backers. Finally, it is pertinent for farmers to utilize funding to adopt climate-change risk mitigation strategies. Crowdfunding platforms could accentuate these initiatives and convey farmers' readiness to counter climate change risk. This could foster backers' confidence to fund agricultural projects, despite being aware of climate change and its detrimental impacts on the agriculture sector.

Implementing these strategies and increasing the number of backers for agricultural projects can bring significant benefits to small scale farmers. It can help them to overcome major financial and marketing challenges, enabling their farming operations to expand and become more resilient in the face of climate change risks. Additionally, it lays a foundation for supporting sustainable agriculture practices, which are crucial for ensuring the long-term viability of agricultural systems.

Policymakers can also support this trend by designing policies encouraging and facilitating crowdfunding participation through tax incentives and streamlining regulatory frameworks.

Limitations and directions for future research

The study is not without limitations. First, caution is advised in generalizing the results. The study examines crowdfunding motivations and behavior, specifically on agricultural projects in an emerging country, using the case of the Philippines. The dynamics of crowdfunding behavior may vary in territories with different socioeconomic characteristics and agricultural development scenarios; thus, the current findings need further validation. Second, there is a need to elaborate and investigate the effects of specific benefits/cost parameters and other project/venture characteristics that could potentially influence funding decisions.

Author contributions

Mark Ratilla: Conceptualization, Methodology, Software, Writing - Original Draft, Formal analysis, Writing - Review & Editing. Diego Fernando Plata Lerma: Conceptualization; Methodology. Martina Rosiková: Resources, Data Curation, Funding Acquisition. Khurram Ajaz Khan: Writing - Review & Editing, Supervision. All authors have contributed significantly to the research and writing of this manuscript. All authors have read, revised, and approved the final version of this work.

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Data availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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