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Young Farmers in "The New World of Work": The Contribution of New Media to the Work Engagement and Professional Identities*

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Abstract This study aims to explore the contribution of "The New World of Work" to farming, a career often viewed as unattractive among youth, and, as highlighted by the "young farmer problem" in the literature. This paper draws upon research on the role of "*new ways of working*" in work engagement and farmer identity among young farmers. A mixed-method approach is used based on data from two Mediterranean Islands, Crete and Cyprus. Based on the polymedia- new theory of digital media, the study focuses both on new media use and new media engagement for work-related tasks. Our findings highlight that the "The New World of Work" is an important phenomenon for initiating positive change toward cohesive social-self in a career (subjective perception of a farming career concerning others). However, we identified binary terms used by farmers when explaining conflicts between cohesive self-concept (expression of a strong sense of self regarding their farming career) and social-self in a career. The study concludes that the duality between career self-concepts and social-self still holds patterns even among young generation farmers, regardless of their integration level to new media.

Introduction

As noted by the "young farmer problem" and "lack of generational renewal" in the agrarian literature, the farming profession faces difficulties attracting youth. Challenges mainly come from economic and geographic factors and are firmly attached to social and cultural norms (Coopmans et al. 2021; Eistrup et al. 2019; Meuwissen et al. 2019; Pitson et al. 2020; Shortall, McKee, and Sutherland 2020; Simões et al. 2021; Unay-Gailhard and Simões 2022; Yoon et al. 2021). The subjective

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perceptions toward farming include loneliness and isolation, hard physical work, and uncertain economic and weather conditions (Hounsome et al. 2012). A relatively high rate of suicide among farmers has also been noted in developed and developing countries (Cubbon et al. 2021; Howard et al. 2021; Torske et al. 2015).

Therefore, young farmers choosing to be involved in an unattractive professional occupation may consider a specific group of professionals that can help understand the phenomenon of "The New World of Work" in the farming sector. "The New World of Work," which signifies new ways of working in the digital age, is a phenomenon leading to changes in traditional labor market dynamics. Overall, the phenomenon discusses the role of digital communication tools, notably the Internet and mobile devices, for work-related tasks in the changing world of work (Kelliher and Richardson 2011; Microsoft 2005).

Dedicated to understanding the changing world of work in public and private organizations, a new research stream called "*new ways of working*" has emerged within the organizational behavior literature. The "*new ways of working*" is defined as new forms of work supported by digital technologies that allow for flexibility in time, location, and private life; autonomy in work tasks; and adaptability to career breaks (see Renard et al. (2021) for definitional differences in the literature).

Exploring the contribution of the "*new ways of working*" on the work engagement and professional identities of young farming professionals is the primary motivation of this study. This paper defines two main objectives:

Objective (1) a comparison of young farmers based on their integration levels with the "new ways of working" in terms of their work engagement (as a proxy for self-concept analysis) and professional identity (as a proxy for social-self) and

Objective (2) an investigation of the young farmers' subjective evaluations of their work engagement and professional identities and the contributing role of "new ways of working" in their self-evaluation.

This study uses quantitative ($N = 76$, surveys) and qualitative ($N = 21$, in-depth interviews) data from young farmers representing a range of diverse farm types on two Mediterranean islands located in the eastern Mediterranean Sea: Crete (a Greece island) and Cyprus (an island state). Both islands have vibrant agricultural activity and face the same issue relating to the "young farmer problem" and lack of farm successors. The studied islands help understand contemporary farm succession issues in developed economies within specific geographical contexts (island geographies).

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The collected data were analyzed using a mixed-method approach to capture the potential role of emotional or social constructs in the investigated relationship. The quantitative analysis includes an investigation of the clusters of young farmers that show a similar intensity level of new media use for work. Farmers' intensity level of new media use is considered to assess the "*new ways of working*". Based on the polymedia-new theory of digital media (Madianou and Miller 2018), communicative opportunities considered an "integrated structure", and clustering of young farmers used information on their new media use, as well as new media engagement. The Kruskal–Wallis H tests were conducted to explore the differences among clusters. To measure work engagement, Ultrich's work engagement scale (Schaufeli and Bakker 2004) is used. The qualitative analyses used the descriptive versus coding approach (Saldaña 2013), and farmers' subjective judgments, emotions, and conflicts toward work engagement and professional identity statements were analyzed.

The Focus of the Study: Young Farmers in "The New World of Work"

Scholars across organizational behavior and entrepreneurship studies have sought to understand the changing world of work from the perspectives of organizations, employees, and entrepreneurship behavior with two research streams of "*new ways of working*" and "*new ways of doing business*" (de Leede 2017; Kelliher and Richardson 2011).

New Ways of Working. In organizational behavior studies by Gerards, de Grip, and Weustink (2018) and Gerards, van Wetten, and van Sambeek (2021), the "*new ways of working*" research stream looks at things from employees' perspectives and conceptualizes the new working practices that are different from the "old ways of working" within five facets: (i) time- and location-independent work (e.g., increased worker autonomy); (ii) management of output or performance (e.g., allowing employees to determine the way they work); (iii) access to organizational knowledge (e.g., free accessibility of ideas, experiences, and getting in touch quickly with colleagues); (iv) flexibility in work relations (e.g., allowing employees to arrange their workload based on their private situation), and (v) freely accessible open workplaces (e.g., minimizing physical and mental distance via stimulating cooperation among colleagues).

New Ways of Doing Business. In entrepreneurship studies (Kraus et al. 2019; Nambisan 2017), the questions raised at the intersection of digital communication tools and entrepreneurship result in a new research agenda of digital entrepreneurship that is defined as "*the reconciliation of traditional entrepreneurship with the new way of creating*

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and doing business in the digital era" (Le Dinh, Vu, and Ayayi 2018:1). According to Nambisan (2017), two main differences between the "*new ways of doing business*" and the traditional ones: (i) less bounded entrepreneurial processes/outcomes (e.g., an increase in the scope and market reach of a product offering) and (ii) less predefinition in entrepreneurial agency (e.g., evolving in the ability to reach and develop entrepreneurial ideas using crowdfunding platforms and digital 3D printing systems).

This study is based on the intersection of these two research streams of "*new ways of working*" and "*new ways of doing business*" and aims to bring the concept of "The New World of Work" into the debate on the "young farmer problem" within analyses in work engagement and farmer identity. In "The New World of Work" era, how do "*new ways of working*" influence employees'and entrepreneurs' work engagements and professional identities? To what extent do "*new ways of working*" contribute to the involvement in unattractive professional occupations, such as farming?

This study proceeds within seven sections. The next, background section provides a literature review. The third section describes the data and methodology. The fourth section presents the study findings. The following sections discuss and conclude the study results with the limitation of the study.

Background

The framework for this study is based on rural sociology studies, agri-entrepreneurship literature, work engagement studies, and the intersection among them.

The Theme of Work Engagement and Utrecht's Work Engagement Scale

The concept of work engagement was introduced by Schaufeli et al. (2001) to define the positive aspects of well-being while undertaking work-related tasks and determining the willingness of an individual to put energetic effort into their work. A high level of work engagement prevents exhaustion and burnout from work (Schaufeli and Bakker 2004; Schaufeli, Bakker, and Van Rhenen 2019). Work engagement is commonly accepted as "*a positive, fulfilling, work-related state of mind characterized by vigor, dedication, and absorption*" (Schaufeli et al. 2001:7).

A high level of energy and a willingness to invest effort in the face of difficulties are represented within the characteristics of vigor. Dedication refers to a strong involvement in work and experiencing a sense of significance, enthusiasm, inspiration, pride, and challenge. Absorption refers to high concentration and happiness at work.

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The Utrecht Work Engagement Scale (UWES) has been developed based on these characteristics through various statements: (i) Vigor (e.g., "*At my work, I feel bursting with energy*"; "*At my job, I feel strong*"); (ii) Dedication (e.g., "*I am enthusiastic about my job*"; "*My job inspires me*"), and (iii) Absorption (e.g., "*When I am working, I forget everything else around me*"; "*I feel happy when I am working intensely*"). With increasing attention being given to the theme of work engagement, particularly in organizational behavior studies (Gerards et al. 2021), psychology (Kotera and Vione 2020), and communication studies (Oksa et al. 2021), UWES is accepted as a valid and reliable indicator. Previous work engagement studies have considered various occupational groups (Schaufeli and Bakker 2004).

Work Engagement Studies: A Particular Pattern among Farmers. Schaufeli and Bakker (2004) and Hakanen et al. (2019) are two of the few studies investigating the work engagement of farmers as an occupational group. The findings of Schaufeli and Bakker (2004), which include 23 studies that were conducted between 1999 and 2003 in the countries of Australia, Canada, Finland, France, Germany, Greece, Norway, South Africa, and Spain, show a particular pattern, whereby farmers and managers exhibit the highest scores in the three characteristics of work engagement relative to the other included occupational groups. A study by Hakanen et al. (2019) that was conducted in 30 European countries found that employees in human service jobs (e.g., health and social care), along with those in agriculture, reported higher work engagement than employees in other industries (e.g., manufacturing and transport).

As discussed in the study of Hakanen et al. (2019), one of the possible explanations for the high work engagement score among farmers may be linked to the entrepreneurship nature of their work: individuals in entrepreneurial jobs are usually considered to have proactive characteristics with intrinsic work motivation and autonomy. Another possible explanation may be linked to the "career calling" literature. The study of Unay-Gailhard and Simões (2022) on young farmers' career construction paths shows that involvement with farming is entailed in complex career patterns that require passion and are expressed as a "career calling".

The Role of "New Ways of Working" in Work Engagement

Following the dramatic increase in the application of "*new ways of working*", its role in work engagement has led to interest from different perspectives among occupational groups. This review aims to provide findings on the investigated relationship among employees and organizations, intrapreneurship, and agri-entrepreneurship perspectives.

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Employees' and Organizations' Perspectives. In the literature, the studies looking at the relationship from employees' and organizations' perspectives do not display a straightforward relationship. On the one hand, this is due to differences in methodological approaches, and on the other hand, "*new ways of working*" have been studied with a focus on different components (e.g., different types of work flexibility, such as flexibility in time, flexibility to access knowledge, and flexibility in the management of work-related tasks), and with various work engagement criteria (e.g., job satisfaction, work enjoyment, intrinsic work motivation, fatigue, exhaustion, and burnout).

The review by Renard et al. (2021) investigates the relationship from the employee perspective, synthesizing the recent findings on the impact of "*new ways of working*" as (i) a neutral effect (e.g., no significant effect on both work engagement and burnout as documented by Van Steenbergen et al. (2018)); (ii) a one-sided positive or negativeeffect (e.g., a positive effect for both organizations and employees, such as an increase in intrinsic work motivation, and work enjoyment, as found in a study by Peters et al. (2014), and an increase in communication quality among colleagues, which improved work engagement, creativity, and innovation, as reported by Ten Brummelhuis et al. (2012) and Ruostela et al. (2015)); and (iii) a contradictory effect (e.g., a beneficial organizational effect but negative employee effect, such as reduced social cohesion with individualized, detached, and financially driven aspects, as found by Kingma (2019)).

Intrapreneurship Perspective. Intrapreneurship is defined as employees who show an entrepreneurial spirit within an existing organization. For example, displaying proactive, innovative ideas and initiating a bottom–up process for new models in the organization (e.g., via innovation-related outcomes) or promotion of the market (e.g., via independent entrepreneurial initiatives) (Gerards et al. 2021).

Apart from the employee perspective, in the literature, the relationship between the role of "*new ways of working*" and work engagement has also been investigated from an intrapreneurial perspective (Gawke, Gorgievski, and Bakker 2017; Gerards et al. 2021; Puech and Durand 2017). Overall, these studies highlight how "*new ways of working*" have the potential to increase work engagement through increased accessibility to internal (organizational) and external knowledge that is positively related to intrapreneurial behavior (Gawke et al. 2017; Gerards et al. 2021) and projects (Puech and Durand 2017). These results support those of previous research that considers the essential role of access to knowledge networks for acquiring new perspectives and generating new ideas (Kuratko, Hornsby, and Covin 2014; Perry-Smith 2006).

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Considering the family farm business succession among family members (e.g., when a father employs his child/children as an employee(s) for the farm business), potential successors may exhibit an intrapreneurship spirit during the succession period by showing proactive, innovative, and risk-taking behavior.

Agri-Entrepreneurship Perspective. There have been no recent findings in the agrarian literature documenting the relationship between "*new ways of working*" and work engagement among farmers. Nevertheless, the digital agri-entrepreneurship and rural sociology literature provide insights on how using digital communication tools in farm work generates support for farmers, which gives insights on potential indirect associations with their work engagement.

Some examples that document the role of digital communication tools in work-related tasks are (i) supporting career initiation and progression via the acquisition of hard and soft skills and gaining agri-entrepreneurship inspiration from knowledge networks (Carolan 2020; Unay-Gailhard and Simões 2022); (ii) supporting the understanding of traditional agro-ecological knowledge (Burton and Riley 2018); (iii) improving farmer-to-farmer knowledge sharing in relation to sustainable soil management practices (Mills et al. 2018); (iv) helping progress business plan development among female farmers (Polanin et al. 2017); (v) supporting the management of marketing channels via the farmer–consumer connection (Elghannam, Escribano, and Mesias 2017); (vi) increasing the awareness of agri-entrepreneurship ideas in rural regions via e-commerce and crowdfunding platforms (Su et al. 2021; Yan et al. 2018), and helping launch innovative business plans (Filimonova et al. 2019; Mardhiyyah, Rasyidi, and Hidayah 2020).

The Role of "New Ways of Working" on Professional Identity

Recent rural sociology studies focusing on the changing nature of farm entry and farm work have captured a "new farm identity"among farmers in the digital age (Chiswell and Lobley 2018; Riley and Robertson 2021; Unay-Gailhard and Simões 2022; Xie 2021).

The agrarian literature documents the role of digital communication tools in the professional identity construction of the farming profession as (i) support for a new farmer identity construction (or "battle of identity") due to fast exposure to diverse agricultural knowledge and philosophies from around the world via new media (Rotz 2018); (ii) increased awareness of the different forms of farming practices wherein farmers may choose the best-matched practices based on their farming identity (Shepherd et al. 2018); (iii) contributing to a sense of self-recognition by others on a global level and facilitating the construction of a multiple

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cohesive career self-concept, such as the development of dual careers and being a "part-time" farmer (Unay-Gailhard and Simões 2022); (iv) enabling farming to be viewed as a long-term professional identity due to online financial and social (e.g., building trust via social media) opportunities (Newsome 2021); (v) helping overcome the perceptions of a farmer's profession being linked with physical, social, and cultural isolation (Ievoli et al. 2019; Unay-Gailhard and Brennen 2022).

This paper aims to progress beyond the state-of-the-art and to add new insights to the emerging literature about the "*new ways of working*". This study considered work engagement as a proxy for career self-concept and professional identity as a proxy for social-self in career. Analyses focus on young farmers who may consider being involved in the profession of farming as an employee, intrapreneur, or an agri-entrepreneur. In this study, while the definition of cohesive self-concept is accepted as the expression of a strong sense of self concerning a career (Modestino, Sugiyama, and Ladge 2019), the social self is seen as the comparison of information to define or modify career self-concepts or professional identities (Alicke, Zell, and Guenther 2013; Anderson and Betz 2001).

Data and Methodology

Case Study Islands: Crete and Cyprus

This study was conducted with Cretan and Cypriot young farmers. Both Mediterranean islands (Crete and Cyprus) have a vibrant agriculture sector next to tourism. Wine, olive oil, vegetables, and horticulture are the main farming activities in Crete, and cereal, vegetables, fruits, and animals (mainly goats and sheep) are the important agricultural productions in Cyprus.

Regarding the "young farmer problem", both islands face difficulties attracting youth into the farming profession. Among the European Union (EU) member states, the proportion of young farmers is lowest in Cyprus (3.3 percent) (Špička and Berg 2022), and Greece has one of the lowest shares of young farmers in the total number of farm managers (3.7 percent) (EU, 2019). Within this context, the particular relevance of this study is the potential for research on the actual "young farmer problem" in both Mediterranean islands, as this possesses clearly defined geographical borders and institutional structures.

Data Sampling Approach for Quantitative and Qualitative Interviews

This research began with semi-structured face-to-face interviews with experts ($N = 18$) engaged in farming (e.g., the president of an avocado and citrus cooperative in Crete, the president of the Union of Cypriot

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Farmers, the Director of the Department of Rural Development and Agriculture in Crete, experts involved with young farmer payment regulations, an agri-food journalist, agronomists, geographer, and agricultural economists).

The aims of these expert interviews were threefold: (i) to have guidance in relation to the local contexts (e.g., each expert was asked to identify key challenges and key actors engaged with supporting youth to enter farming); (ii) to explore the involvement of youth in the profession by considering different farm types (e.g., each expert was asked to define typical farm types in terms of size, specialization, and managerial ownership in the island); and (iii) to access young farmers for quantitative surveys and qualitative interviews (e.g., each expert was asked to reach active young farmers linked to the defined typical farm types).

The study participants were selected via direct contact with interviewed experts in the region. In some cases, the main researcher reached active young farmers using snowball sampling via the network of interviewed farmers. All the quantitative survey participants ($N = 76$ young farmers) were asked to join the qualitative interview. With a 27 percent response rate, qualitative interviews were conducted with 21 young farmers. Even though the qualitatively interviewed young farmers within this study are limited, the study sample includes narratives from typical farm types that enable an understanding of new media's contribution to the work engagement and farmer identity of young farmers in different farm types. Furthermore, the results of expert interviews supported this understanding.

Quantitative Analyses: Data Collection and Used Methodology

For the quantitative analyses, data were collected via the pen-and-paper survey design method (detailed in the Annex A). Quantitative surveys that included closed-ended questions were conducted with active farmers ($N = 137$; $n = 76$ Cretan and $n = 60$ Cypriot farmers). Since the focus of this study is young farmers and considering the 45-year-old age threshold based on studies dealing with the "young farmer problem" in the EU (Coopmans et al. 2019; Hamilton, Bosworth, and Ruto 2015), only those from the quantitative survey participants that were <45 years old were considered in the quantitative analyses ($N = 76$).

As a first step, the clustering method was used for the identification of groups of participants based on their two-dimensional integration level with digital communication tools for their work-related tasks. The clustering method is based on the polymedia- new theory of digital media (Madianou and Miller 2018), wherein new media are understood as an "integrated structure" where interpersonal relationships are experienced

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and managed. In other words, the use of interpersonal new media not only covers the "experience" dimension (e.g., consuming the new media relationship) but also includes the "management" dimension (e.g., allowing for a relationship to be constructed) as an economic, social construction, as well as a cognitive structure. The clustering method used to identify groups of similar farmers and their integration level to the new media via the "experience" and "management" dimensions, which included the intensity of new media use and new media engagement for work-related tasks. Figure 1 shows the distribution of participants in each cluster within these two dimensions.

The "experience dimension" includes the intensity of the usage/experience with new media (webpages, social media, blogs, and mobile applications) for work-related tasks. The "management dimension" includes the intensity of integration with new media (webpages, social media, blogs, mobile applications, and e-government) to keep track of, promote, or manage work-related tasks. To measure the extent to which young farmers work with digital communication tools and the extent to which young farmers are engaged in the management dimension, nine

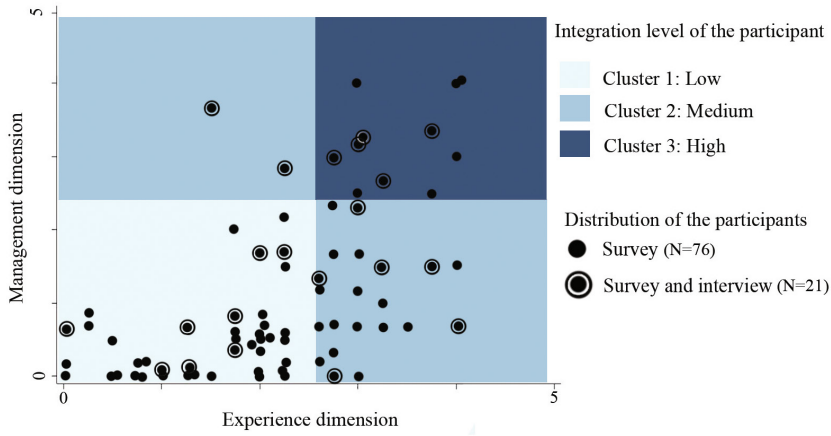

Figure 1. Distribution of the Study Participants: Three Clusters in Terms of the Integration Level of Participants to New Media for Work-Related Tasks. The experience dimension shows the aggregated mean value of statements (that used to measure the intensity of the usage/experience with new media for work) for each participant. The management dimension shows the aggregated mean value of statements (that used to measure the integration with new media to keep track of, promote, or manage work) for each participant. The distribution of study participants is shown as survey participants (used in the quantitative analyses, $N = 76$) and interview participants (face-to-face in-depth interviews used in the qualitative analyses, $N = 21$). *Source*: Own calculations from the "Young Farmers Survey" with Cypriot and Cretan farmers.

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statements were developed (statements provided in the Annex A). All statements were rated on a five-point scale ranging from "not at all" to "to a very high degree."

For the "experience dimension", the aggregated mean value of four statements for each participant is presented in the *x*-axes of the coordinate grid. For the "management dimension, the aggregated mean value of six statements for each participant is presented in the *y*-axes of the coordinate grid (Figure 1).

The ordered pair value (2,5; 2,5) was considered a proxy for the measurement of the integration level of the participants (which would fit the given data in the most optimum manner) and to group them into three clusters:

Cluster 1-Low: low integration level if ordered pair values ≤2,5;

Cluster 2-Medium: medium level of integration if a minimum of one ordered pair value ≤2.5;

Cluster 3-High: high integration level if ordered pair values >2,5.

In the second step, the Kruskal–Wallis H test was conducted to explore the differences among clusters regarding their socio-demographic characteristics and their answers to the work engagement (Group-I) and professional identity (Group-II) statements (detailed in the Annex A).

Qualitative Analyses: Data Collection and Used Methodology

For the qualitative analyses, face-to-face in-depth interviews were conducted with 21 young farmers ($N = 11$ Cretan and $N = 10$ Cypriot farmers). The profiles of the participants are detailed in Annex B.

Qualitative interviews consisted of three parts, starting with Part 1 (~10 minutes), which was a presentation of the project's aim and an explanation of the purpose of the interview. Part 2 (~60 minutes) was a biographical narrative interview to explore how individuals experience their careers and the factors that shaped their career intentions and orientation. In this part, the main researcher asked a single question intending to reveal the participants' career stories. A quantitative survey was conducted for Part 3 (~30 minutes). The main researcher asked open-ended questions surrounding eight work engagement and professional identity statements to precisely understand participants' subjective perspectives and explore the role of digital communication tools in their work engagement.

The data collected from Part 3 were used as the primary data for this study. The data from Parts 1 and 2 were used as supportive data. All in-depth interviews with the young farmers were digitally recorded, transcribed, and coded manually for qualitative analyses using the in vivo coding method to derive codes from the data.

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Qualitative analyses are based on effective coding methods that investigate the subjective qualities of participants by directly acknowledging their experiences (Saldaña 2013). In our study, participants' subjective judgments, emotions, and conflicts toward work engagement, as a proxy for career self-concept, and professional identity, as a proxy for the social-self in career, were used as motives that explain their perspectives and benefits via the versus coding approach.

In the literature, the versus coding approach is mainly used to identify binary terms or moieties (meaning "half" originally in the French language) used by individuals/groups when explaining conflicts within concepts, ideologies, other humans, or themselves (Saldaña 2013; Wolcott 2003). The versus coding approach has been used in several disciplines for discourse analyses (Rapley 2018), situational analyses (Clarke, Friese, and Washburn 2018), political analyses (Hatch 2002), and narrative inquiry and analyses (Holstein and Gubrium 2012).

Findings

Our findings are reported in two subsections; the quantitative findings provide insights into Objective 1, while the qualitative findings give information about Objective 2.

Quantitative Findings

The descriptive statistics are shown in Table 1, which summarizes the farm and farmer characteristics of the entire sample within the investigated clusters. The results of the Kruskal–Wallis H test show a statistically significant difference in the mean values between the clusters.

Tables 2 and 3 provide a detailed overview of the score results used to assess Group-I (work engagement) and Group-II (professional identity) statements by cluster.

Description: Entire Sample and Three Clusters. The entire sample covered 76 farmers, with young females representing one-third of the sample (Table 1). The share of farmers with a university education is 28 percent, and only 21 percent have an agricultural diploma. 80 percent of the young farmers report having a farming family background, and 84 percent are farm owners. Around half of the sample (48 percent) have <5 years of farming experience, and the majority of young farmers (71 percent) report having less than two employees.

Regarding clusters, the young farmers showing a high level of new media integration for work-related tasks ($N = 11$) are lower in numbers relative to other clusters that have medium ($N = 23$) and low ($N = 42$) usage levels. Respondents in Cluster 3 significantly differ from those in Clusters 2 and 1 regarding their education level, years in their current

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Table 1. Characteristics of the Entire Sample and Investigated Clusters

Variables	Units	Entire Sample $N = 76$	The Integration Level of Young Farmers to New Media for Work: Cluster 1 Low $N = 42$	Cluster 2 Medium $N = 23$	Cluster 3 High $N = 11$	Kruskal–Wallis H Test: p	Chi-Square
Sex						.3957	1.854
	Male	75	73.8	69.5	90.9		
	Female	25	26.1	30.4	9		
Education						.0442*	6.239
	College	52.6	64.2	43.4	27.2		
	School	18.4	16.6	17.3	27.2		
	University	28.9	19.0	39.1	45.4		
Do you have an agricultural education diploma?						.2730	2.597
	Yes	21.0	14.2	30.4	27.2		
	No	78.9	85.7	69.5	72.7		
Do you have a farming family background?						.0878	4.865
	Yes	80.2	88.1	65.2	81.8		
	No	19.7	11.9	34.7	18.1		
Current position on the farm						.4125	1.771
	Owner	84.2	83.3	91.3	72.7		
	Employee	2.6	2.3	–	9.0		
	Manager	13.1	14.2	8.7	18.1		
Years in the current position						.0201*	7.809
	0–5	48.6	57.1	52.1	9.0		
	5–10	32.8	26.1	34.7	54.5		
	>10	18.4	16.6	13	36.3		
Land ownership status						.908	0.193
	Own	41.3	42.8	40.9	36.3		

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Table 1. ***Continued***

Variables	Units	Entire Sample $N = 76$	The Integration Level of Young Farmers to New Media for Work: Cluster 1 Low $N = 42$	Cluster 2 Medium $N = 23$	Cluster 3 High $N = 11$	Kruskal–Wallis H Test: p	Chi-Square
	Rent	10.6	9.5	13.6	9.0		
	Both	48	47.6	45.4	54.5		
Is farming your only income?						.5351	1.250
	Yes	67.1	64.2	65.2	81.8		
	No	32.8	35.7	34.7	18.1		
Number of employees on the farm						.0002*	17.548
	0–2	71	80.9	73.9	27.2		
	2–5	17.1	16.6	21.7	9.0		
	>5	11.8	2.3	4.3	63.6		

Note: Each cluster represents the participants' two-dimensional integration level ("experience" and management" dimensions: intensity of new media use, as well as new media engagement) with digital communication tools for their work-related tasks. Cluster 1 = a low integration level; Cluster 2 = a medium level of integration; and Cluster 3 = a high level of integration to new media for work-related tasks.

Source: Own calculations from the "Young Farmers Survey" with Cypriot and Cretan farmers.

*Indicates significance levels of given p values; $p < .05$.

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Table 2. Differences in Statements Regarding the Integration Level of New Media for Work

	% of Responders							Kruskal–Wallis Test	
	Never			Neutral			Always	*p*	Chi-square
Group-I: Work engagement statements									
1. I do my job with energy								.3777	1.947
Cluster 1: Low	–	2.3	2.3	9.5	23.8	30.9	**30.9**		
Cluster 2: Medium		4.3	8.7	4.3	17.3	21.7	**43.4**		
Cluster 3: High	18.1	–	–	–	–	18.1	**63.6**		
2. I like to learn something new about my work								.2200	3.028
Cluster 1: Low	–	–	–	2.3	16.6	21.4	**59.5**		
Cluster 2: Medium	–	4.3	–	–	8.7	17.3	**69.5**		
Cluster 3: High	9.0	–	–	–	–	–	**90.9**		
3. I'm enthusiastic about my work								.0408*	6.400
Cluster 1: Low	–	2.3	2.3	19.0	23.8	26.1	**26.1**		
Cluster 2: Medium	–	4.3	4.3	13.0	21.7	21.7	**34.7**		
Cluster 3: High	9.0					18.1	**72.7**		
4. I'm proud of my work								.7818	0.492
Cluster 1: Low	–	–	2.3	7.1	16.6	19.0	**54.7**		
Cluster 2: Medium	–	4.3	4.3	4.3	17.3	8.7	**60.8**		
Cluster 3: High	–	–	18.1	–	–	9.0	**72.7**		
5. I feel happy when I'm working								.2940	2.448
Cluster 1: Low	–	–	9.5	14.2	23.8	21.4	**30.9**		
Cluster 2: Medium	–	4.3	8.7	13.0	17.3	26.0	**30.4**		
Cluster 3: High	18.1	–	–	–	–	18.1	**63.6**		
Group-II: Professional identity statements									
6. I believe that the prestige of farmers is increasing in society								.0855	4.919
Cluster 1: Low	2.3	19.0	7.1	16.6	21.4	30.9	**2.3**		
Cluster 2: Medium	13.0	8.7	8.7	13.0	30.4	13.0	**13.0**		

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Table 2. ***Continued***

	% of Responders							Kruskal–Wallis Test	
	Never			Neutral			Always	*p*	Chi-square
Cluster 3: High	–	–	18.1	9.0	9.0	27.2	**36.3**		
7. I believe that it is definitely a good time to be a farmer								.0264*	7.272
Cluster 1: Low	4.7	9.5	19.0	23.8	16.6	4.7	**21.4**		
Cluster 2: Medium	4.3	13.0	4.3	21.7	13.0	21.7	**21.7**		
Cluster 3: High	–	–	9.0	–	27.2	9.0	**54.5**		
8. I believe that the younger generation needs to be involved more in farming as a career									
Cluster 1: Low	11.9	7.1	11.9	16.6	19.0	23.8	**9.5**	.1094	4.426
Cluster 2: Medium	4.3	8.7	8.7	8.7	43.4	21.7	**4.3**		
Cluster 3: High	–	–	–	27.2	18.1	18.1	**36.3**		

Note: The respondents were asked to rate the eight statements on a seven-point scale ranging from "never" to "always." Bold values show the % of responders who rated the statement with "always." (e.g., while 30.9% of respondents in Cluster 1 rated the statement "I do my job with energy" with "always" this number increased to 63.6% for Clusters 3).

Source: Own calculations from the "Young Farmers Survey" with Cypriot and Cretan farmers.

*Indicates significance levels of given p values; $p < .05$.

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Table 3. Survey Respondents by Aggregated Mean Levels of Statements

	Mean Levels of Statements				Kruskal–Wallis	
	Entire Sample $N = 76$	Cluster 1: Low $N = 42$	Cluster 2: Medium $N = 23$	Cluster 3: High $N = 11$	p	Chi-Square
Group-I: Work engagement	4.87	4.84	4.84	5.07	.0798	4.987
Group-II: Professional identity	3.62	3.36	3.56	4.72	.0184*	7.942

Source: Own calculations from the "Young Farmers Survey" with Cypriot and Cretan farmers.

*Indicates significance levels of given p values; $p < .05$.

position, and the number of employees on their farm. There is a significantly higher percentage of university-level educated farmers in Cluster 3 (45 percent) relative to other clusters (19 percent for Cluster 1 and 39 percent for Cluster 2). Young farmers who show a higher level of integration with new media have spent significantly more years in their profession and work with more employees. The three clusters show high similarities in land ownership status; in each cluster, around half of the investigated farmers report being landowners.

Comparison among Clusters. *Group-I, work engagement statements*: in terms of % of respondents (Table 2), Cluster 3 shows the highest percentages for all statements. In other words, for all of the investigated work engagement statements, the % of respondents in Cluster 3 showed higher agreement responses (Likert scale that measure the frequency with "always") relative to the % of respondents in Cluster 2 and Cluster 1. Relatively important differences were observed between clusters for the statement "*I feel happy when I'm working*". While 63 percent of the respondents in Cluster 3 rated the statement with "always", this number decreased to 30 percent for Clusters 2 and 1 (Table 2).

Although not statistically significant, a difference appeared concerning the aggregated mean levels of work engagement statements, given that Cluster 3 show slightly higher work engagement scores than Cluster 1 and Cluster 2 (Table 3).

The results of the Kruskal–Wallis test (Table 2) show significant differences among clusters for the work engagement characteristics of dedication, "*I'm enthusiastic about my work*", with respondents in Cluster 3 scoring significantly higher.

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Group-II, professional identity statements: similar to the work engagement statements, in terms of % of respondents (Table 2), Cluster 3 shows a higher agreement response in all professional identity statements relative to Cluster 1 and Cluster 2. For example, for the statement "*I believe that the prestige of farmers is increasing in society*", while 36 percent of the respondents in Cluster 3 rated the statement with "always", this number decreased to 13 percent for Cluster 2 and 2 percent for Cluster 1.

The differences in the aggregated mean levels of professional identity statements between the clusters are significant, with the respondents in Cluster 3 agreeing to the highest degree (Table 3). A particular pattern is observed, whereby respondents in Cluster 3 exhibit significantly higher scores for the statement, "*I believe that it is definitely a good time to be a farmer*" (Table 2) relative to Cluster 2 and Cluster 1.

Qualitative Findings

The qualitative findings of our study show two main lines of results. First, our data show that distinct moieties emerged for the young farmers' subjective perspectives on work engagement and professional identity statements. Strong dualities are evident in the data, as participants openly expressed their viewpoints with sentences such as, "*On the one hand… on the other hand…*"; "*Yes, and no*"; "*There are two sides of the coin*"; "*It is a controversial issue*"; and "*I have two different thoughts on that point*".

Second, when the young farmers express their subjective perspectives on work engagement and professional identity statements, the role of digital communication tools is evident in some cases as a form of life experience examples, although most of the time they are expressed as indirect effects.

By using the versus coding approach analyses, we identified three major moieties by using three initial analytical categorization tactics: stakeholders (for I), perceptions (for II), and emotions (for III). In total, eight sets of subsumed versus codes clustered into these three final moiety categories as shown in Table 4.

For each examined moiety, we first provided the young farmers' perceptions on work engagement and professional identity statements followed by statements to illustrate the role of new media use on their self-evaluation.

I Farmers Versus Others. The first major moieties between farmers versus others emerged across all of the young farmers' interviews on the two islands as a basis for explaining both the advantages and disadvantages of being involved in a farming career over "others". The term "others"

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Table 4. Results of Versus Coding: Three Major Moieties with Eight Subsumed Versus Codes

I	**Farmers versus Others**	
	(i)	*Farmers (me) versus other farmers;*
	(ii)	*Farmers versus other professionals;*
	(iii)	*Farmers versus institutions.*
II	**Struggles versus Surrenders**	
	(iv)	*Opportunities versus risks;*
	(v)	*Young generation versus old generation.*
III	**Happiness versus Prestige**	
	(vi)	*"I love my job" versus "I would not recommend my job";*
	(vii)	*Working with nature versus working in an office;*
	(viii)	*Pride versus shame.*

Source: "Young Farmers Survey" with Cypriot and Cretan farmers.

is used when discussing about other farmers, professionals, institutions, and society.

(i) *Farmers (me) versus other farmers*: When we asked participants' their points of view on the statement "*I believe that it is definitely a good time to be a farmer*", the statement "*it depends on the farmer*"was used by many participants (e.g., it depends how you farm or which farm practices you are involved with). Respondents often mentioned their career strategies as a self-satisfactory example compared to other farmers. Income diversification, involvement with the whole supply chain, and the use of modern marketing strategies with proper messaging (e.g., use of social media, webpages) were noted as essential strategies to support the statement "*It's good time to be a farmer*".

In regards to their digital maturity, several participants spoke about their investments in webpage design and collaborations with digital strategists for their farm's social media accounts. Others spoke about the contribution of new media in relation to farm size, with large farms profiting further from social media relative to small size farms.

(ii) *Farmers versus other professionals*: The participants also provided input on the statement related to the prestige of farming in comparison to the prestige of other professions. The given examples provided by the participants included doctors, teachers, and police officers. Several participants noted the importance of viewing the profession of farming as different compared to other professions, in that it is associated with higher levels of difficulty and require knowledge on many diverse topics.

(iii) *Farmers versus institutions*: While highly positive views were expressed concerning happiness and enthusiasm about being involved in the farming profession, when asked directly, many respondents were critical of the challenges of the farming profession that are associated

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with institutions. Several points were reported when discussing the duality of happiness and enthusiasm at work. For example, there is difficulty obtaining credit from banks as a farmer compared to other professionals, very high-income taxes for farmers relative to government sector workers, a lack of government support, long waiting times for certification procedures, and a lack of fair and profitable relationships with intermediaries.

Regarding the use of digital media, almost all of the participants from both islands expressed their use of e-government services. Some participants shared their future desires to easily access personalized information about government support within the Rural Development Programme. Online marketing was mentioned as having the ability to enable farmers to become independent in the market. However, "trusting online demand" and "a lack of skills to manage online marketing channels" were the two leading examples of barriers to profits from these online platforms.

II Struggles Versus Surrenders. The second major moieties between struggles versus surrenders describe the mutually exclusive division within the farming profession, most of the time being discussed as incorporated with *opportunities* versus *risks*, as well as differences in attitudes between the *young* versus *old generation*.

(iv) *Opportunities versus risks*: The most frequently raised challenge among all participants across the two islands concerned the duality of the high unemployment situation for youth. For most participants, unemployment was noted as an opportunity to be involved with farming, with some participants highlighting the long-term income benefits of the farming profession compared to other service sectors on the island.

Besides unemployment, risks were expressed through statements like "*working with uncontrollable/unknown factors*" and "*having an unsecure income*" and the opportunities discussed in comparison to other sectors, such as "*the agriculture and food sector is one of the biggest sectors*" and "*everybody needs food*".

Regarding the role of digital communication tools, when discussing unemployment, several participants (especially those involved with farming during the Greek government's debt crisis and long-term unemployment periods) mentioned the importance of accessing free online educational portals, personal and organizational knowledge, and innovative ideas on their farm involvement decision. Two participants explicitly noted how the opportunities of digital communication tools facilitate more efficient communication among their younger colleagues.

(v) *Young generation versus old generation*: Whilepositive views were expressed concerning the importance of the young and educated

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generations' involvement with farming, these views were expressed with two further critical points: (i) the ritual nature of farm management among older generations associated with non-innovative ideas and (ii) the unfavorable behavior of youth in the labor market, expressed as "youth look for easy jobs" and "youth do not have the courage to farm".

There was widespread concern about a greater likelihood of using digital agricultural practices in the case of youth involved with farming. Several examples of digital agricultural practices were provided as having the potential to bring farm management to a more professional and profitable level, provide flexibility in work location, and more enjoyment of farm practices (e.g., use of drones, digitally managed irrigation systems, and advanced farm management mobile applications for pruning, spraying and weather forecasts). Several participants also noted the role of digital agricultural practices in facilitating the construction of dual careers (doing farming as a second career), which often forms a small island way of life on both Crete and Cyprus.

III Happiness Versus Prestige. The third major moiety between happiness versus prestige illustrates the binary nature of emotions on participants' work engagement and professional identities within farming careers. The majority of the participants across the two islands explain their involvement with farming as a particular career for its own "happiness" or "love" sake rather than simply having a prestigious job where they do not feel happy.

(vi) "I love my job" versus "I would not recommend my job": Almost all of the participants with children reported that "loving their job" had been the main driving force behind their involvement with farming despite significant challenges that have led them to not recommend farming to their children as a career option.

"*I love my job, but I don't recommend it to my kids*"

was frequently expressed by many participants. Three participants explicitly explained their decision to become a farmer, even though their families do not support their career choices.

(vii) *Working with nature versus working in an office*: the majority of participants associated their career choice with "love" and "passion" with an emotional attachment to the land and nature. This emotional attachment was mainly expressed in comparison to other careers requiring them to stay in an office (or "cave" as described by one participant). The desire to keep continuing to work on the land was expressed as,

"*I love the land and all the love I give returns back to me*", and
"*If you love the land, it transfers that love back to you*".

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Thus, it was not just about being happily involved with a particular career; it also had an element of emotional exchange with nature that they do not see as possible for office jobs.

(viii) *Pride* versus *shame*: Despite the explicit strong agreement with the statement "*I'm proud of my work*", when asked directly, there was also widespread concern about how other people perceive farming as "not a valuable job" with statements such as,

"*If you say I'm a farmer they may laugh at you*";
"*It [my profession] is a shame for my kids at school*";
"*Am I proud of my profession? Yes and no*!", and
"*It may be a shame for other farmers, but not for me because I come from a farming family*".

This theme suggests that while they express pride surrounding their careers as a farmer (subjective success), they also feel as though they are not valued per se by others (objective success).

The prestige of farmers was also noted as an inner conflict that manifests itself as a duality between a farmer's perspective and how society thinks about farmers. The majority of thoughts included examples of how society does not value the farming profession (e.g., farmers are seen as uneducated, simple, and poor people). Many respondents emphasized that even other professionals in society have higher prestige, even though food and farmers are needed. Therefore, the prestige of farming was also discussed within its social dimensions (e.g., to help other professionals access food).

Participants, especially those involved with digital marketing and social media, expressed the importance of adequately managing the new media to show farming as a prestigious profession in society. Participants shared their experiences creating different contents for their farms' social media accounts based on two main aspects: (i) based on different target groups, such as restaurant chefs or tourists, and (ii) based on different new media channels, such as Facebook or Instagram.

The first aspect speaks to the notion of a farmer's autonomy to shape their professional identity via the Internet due to the increasing social media visibility of the food and agriculture industry. The second aspect may interpret within the scope of the moral responsibility of a farmer as a consequence of his/her involvement in different social media ideologies. Expressed moral responsibility—for the adequate management of new media channel(s)—was evident, particularly among responders who have strong online farmer–consumer connections at the global level.

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These two emerged notions (farmer's autonomy, and moral responsibility) are discussed further in the following section.

Discussion

The main contribution of this study is to explore the role of "*new ways of working*" in work engagement and professional identity construction among an occupational group of farmers, with a focus on young professionals. Even though rural regions are experiencing back-to-the-land and agro-ecology movements with new farmers who have strong emotional motivations reflected in both their way of life and their involvement in alternative farming practices (see Bruce 2019; Dolci and Perrin 2018 for the USA and the EU, and Suryanata, Mostafanezhad, and Milne 2021; Unay-Gailhard and Simões 2022 for the island perspectives), the outmigration of youth from rural regions to find better career opportunities is still the norm (May et al. 2019; Sagemen 2022).

Therefore, youth who choose to pursue farming careers in the digital age—against an economic, social, and cultural background that has caused reputational damage to the profession—is considered a specific group of young professionals for understanding the contribution of "The New World of Work" to the farming sector. This study used a mixed-method approach, and integrating quantitative and qualitative findings makes several contributions to the literature within four main aspects.

Socio-Economic Characteristics of Farmers and New Media Use for Work

Firstly, the quantitative data show that there are differences regarding the socio-economic characteristics concerning the use of new media. Young farmers who highly use new media for work have a significantly higher education (not necessarily a degree in agriculture), have more experience in their farming careers, and work with a significantly higher number of employees on their farms.

Regarding the significant variable of education, as documented in the study by Morris and James (2017), there is a positive relationship between education level and social media use among farmers -regardless of age-. Our study found that education level is essential in using new media for work-related tasks, even among young farmers. In our case, university-level education is expected to facilitate young farmers' new media usage and new media management for work. Furthermore, another two significant characteristics (years in the career and the number of employees on the farm -that shape the "status of the young farmer"-) suggest an encouraging effect to integrate highly in new media for work.

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Enthusiasm about One's Work and New Media Use for Work

Second, the comparison of the three young farmer clusters suggests that those farmers in the high integration level of new media show a stronger level of agreement with all statements that include work engagement and professional identity. Even though this relatively high percentage of farmers (in Cluster 3) with strong agreements requires further investigations with a larger study sample, at this stage, the findings provide some insights into the positive relationship between "*new ways of working*" and work engagement, particularly the dedication characteristics. Among the work engagement statements, a significant difference appeared concerning one of the dedication characteristics of work engagement, "enthusiasm about one's work".

This is in line with the studies by Schaufeli and Bakker (2004) and Hakanen et al. (2019), which documented a pattern whereby occupational groups of farmers exhibit one of the highest scores in the three characteristics of work engagement (vigor, dedication, and absorption) relative to other studied occupational groups. Our results add to these findings, showing that age and integration level with new media for work among occupational groups of farmers may play an important role in the work engagement scale, particularly for the dedication characteristics of work engagement.

Work Engagement and New Media Use for Work

Third, a difference (although not statistically significant) concerning the aggregated mean levels of work engagement statements shows that farmers who use new media intensively for their work show higher work engagement scores than low- and medium-level integrated farmers.

This is consistent with the broader literature that documented the positive effect of "*new ways of working*"on work engagement (Kuratko et al. 2014; Perry-Smith 2006; Ruostela et al. 2015; Ten Brummelhuis et al. 2012), and is also in line with agrarian literature reporting on the support of digital communication tools for work-related tasks on farms (Burton and Riley 2018; Carolan 2020; Mills et al. 2018; Unay-Gailhard and Simões 2022).

In light of our in-depth interviews with young farmers, this observed difference concerning the aggregated mean levels of work engagement statements may be explained by two main factors expressed by participants. The "*new ways of working*" have the potential to increase work engagement through (i) increased farmers' autonomy and (ii) facilitating to access knowledge networks.

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(i) "The New World of Work" and farmers' autonomy: the farmers' expressed their autonomy in terms of flexibility in their farm work management, farm output, and the management of their farming careers. Regarding flexibility in the management of farm work, examples such as the "use of drones", and "mobile applications for irrigation, pruning, spraying, and weather forecast" are provided as potential practices that allow for autonomy in work and enjoyment in farm practices. For the flexibility in the management of farm output, many participants, particularly those working with intermediary institutions in the past (e.g., those farmers working with tourism agencies for the management of agri-tourism and those farmers working with middlemen to sell their products), described the changing nature of their work and how they gained the capacity to self-manage new tasks via new media.

Farmer autonomy was also expressed through the capacity of the farmer to manage another career. This may partly be explained through the "island effect", where we can observe part-time farming cultures in some small islands due to several island particularities such as "smallness" (e.g., short distances between urban–rural regions), "economic boundedness" (e.g., multifunctional nature of an island job market), or "belonging" (strong attachment to the land) (Unay-Gailhard and Simões 2022). Besides these island particularities, the participants noted the role of digital agricultural practices in facilitating the construction of dual careers due to the flexibility in managing farm work and farm output.

(ii) "The New World of Work" and access knowledge networks: the importance of new media in terms of facilitating to access to the knowledge networks was expressed via the capacity of the farmers to act quickly in accordance to their actual needs. Participants reported the role of new media in accessing advice on farm practices from diverse actors in their informal and formal networks, the opportunity of accessing online education to improve their skills and develop their agri-entrepreneurship plans, and to find inspiration from other online personal or institutional social media accounts.

These two potential factors (increased farmers' autonomy and facilitating access to knowledge networks) that participants expressed in this study are thus consistent with previous studies investigating the relationship between "*new ways of working*" and work engagement among employees, intrapreneurship, and entrepreneurship perspectives (Gerards et al. 2021; Kuratko et al. 2014; Perry-Smith 2006; Ruostela et al. 2015; Ten Brummelhuis et al. 2012). As provided by previous findings, there is a supportive impact of "*new ways of working*" on work engagement via

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accessibility to knowledge networks to generate new ideas (Gerards et al. 2021; Kuratko et al. 2014; Perry-Smith 2006) and increase creativity and innovation (Ruostela et al. 2015; Ten Brummelhuis et al. 2012).

In this regard, the contribution of our finding is that the studied occupational group (farmers), age structure (youth), and geographical dimension (islands) in the present study help understand the investigated relationship from the perspectives of employee behavior, intrapreneurship, and agri-entrepreneurship spirits.

Professional Identity and New Media Use for Work

Finally, a statistically significant difference appeared concerning the mean levels of professional identity statements, showing that farmers who use new media intensively for their work show higher cohesive professional identities than those who use new media with low- and medium-intensity levels. This result could be explained by the power of social media to create a sense of self-recognition by validating or invalidating career self-concepts (Riley and Robertson 2021; Unay-Gailhard and Simões 2022). In our case, validating career self-concepts may explain the positive significant outcome.

The observed significant difference concerning the aggregated mean levels of professional identity statements may be explained by the qualitative findings that exhibit the strong online connections of young farmers at the territorial, national, and global levels (e.g., online connections between farmer–input provider, farmer–consumer, farmer–citizen, and farmer–farmer).

Within our study context, it is understandable that farmers who use new media intensively for their farm work might show high scores in their professional identity statements, validating a sense of social-self recognition in their careers.

Conclusion

Overall, discussed findings within four main aspects are in line with the polymedia- new theory of digital media (Madianou and Miller 2018) and social identity studies on farmers in the digital age (Newsome 2021; Ogunyiola and Gardezi 2022; Riley and Robertson 2022). All these studies suggest that the use of new media is not just changing in technology levels but also changes in behaviors and relationships, resulting in *emotional*, *social*, and *moral* consequences. Our findings mainly reported the *emotional* and *social* consequences of new media use for work among young farmers and gave tentative insights into the *moral* consequences.

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Emotional Consequences

The agrarian literature on the new media use of farmers has suggested that new media use might redefine farming identities via emotional support via stronger online connections (Sergi and Bonneau 2016). For example, participatory media may let farmers' social media posts resonate with "*empathy rituals*" when discussing about the difficulties of farming practices (Brownlie and Shaw 2019; Riley and Robertson 2021). The findings in this study increase knowledge about the emotional consequences of "The New World of Work" by studying the subjective emotions of young farmers. Our qualitative analyses provide the distinct emotional dualities that emerged among the young farmers' subjective perspectives on work engagement and professional identities.

Social Consequences

The findings from the rural sociology literature highlight the social support dimension of digital communications with farmer–consumer and farmer–citizen connections from geographically and culturally distanced locations (Newsome 2021; Sutherland 2020). Integration of mixed-method findings gives that the "The New World of Work" is an important phenomenon for initiating positive change toward cohesive social-self in a career (subjective perception of a farming career concerning "others"). However, we identified binary terms used by farmers when explaining conflicts between cohesive self-concept (expression of a strong sense of self regarding their farming career) and social-self in a career. The study concludes that the strong duality between career self-concepts and social-self still holds patterns even among the young generation of farmers, regardless of their integration level to new media.

Moral Consequences

The agrarian literature still does not give further insights into the moral consequences of social media use among farmers (within a few exceptions such as the study by Rijswijk et al. 2021). Our findings captured a tentative effect of new media use on moral responsibility among farmers. We crossed with statements that show the moral responsibility of farmers as a consequence of their involvement in different new media channels. Each media channel has different types of socio-demographic audiences and requires moral principles that are respective to these different types of audiences.

Limitations

This paper has some limitations. First, the sample size of qualitative in-depth interviews is limited regarding the participants' integration

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levels of new media use for work (clustered as low, medium, and high). This limits the study from arriving at a conclusion on the differences among these three clusters, and an overall investigation of young farmers' subjective evaluations of their work engagement and professional identities is provided. However, as Coopmans et al. (2019) noted, reaching out to young farmers is difficult due to the unbalanced demographic structure of the farming population, which mainly includes older groups and a very low percentage of young farmers. In Greece and Cyprus, on average, <4 percent of farmers are under 35 years of age (EU, 2019).

Second, this study gives insights into the small island geographies and may include more collective social and cultural influences on the investigated relationship. Future research may also collect data from individualistic geographies or geographies that deal with more isolation and loneliness among farmers (due to longer distance between rural–urban regions relative to small islands) and see if observed emotional dualities in our study still hold patterns.

Last, this study does not aim to discuss the findings from the perspective of islands or provide a comparison across two islands but rather to provide insights on similar patterns on both islands. A further evaluation with a subsection on the geographical dimensions of the topic needs to be considered.

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ANNEX A

The Main Parts of the Quantitative Survey

The quantitative survey included four main parts: *Part 1* includes general information on the socio-demographic characteristics of farmers (education, sex, family background, income, current position on the farm, and the number of employees). *Part 2* encompassed work engagement and professional identity with eight statements. To measure work engagement, we used Ultrich's scale (Schaufeli and Bakker 2004). The recent literature on the farmer's professional identity (Chiswell and Lobley 2018; Riley and Robertson 2021; Sergi and Bonneau 2016; Unay-Gailhard and Simões 2022) was used as a base for the development of statements for professional identity. The respondents were asked to rate the eight statements on a seven-point scale ranging from "never" to "always". *Part 3* was focused on digital communication at work. Based on the Digital Economy and Society Index (DESI), we developed four main items: connectivity, human capital, use of internet, and integration with digital technology. We used fifteen statements on a five-point scale ranging from "not at all" to "to a very high degree". *Part 4* comprised formal and informal networks. Seven statements were used to capture informal and formal network connections for work. Each item was rated on a five-point scale ranging from "not at all" to "to a very high degree". The quantitative surveys were pre-tested and adjusted based on the pre-test results.

Measuring the "Experience Dimension": The Intensity of the Usage/Experience with New Media for Work

To measure the extent to which young farmers work with digital communication tools, four statements were developed, and all statements were rated on a five-point scale ranging from "not at all" to "to a very high degree":

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(i) "I find information about Rural Development Programsvia the internet";
(ii) "I use the internet to reach my professional network (e.g., other farmers, farm advisers, cooperatives, associations, public administration)";
(iii) "I use the internet to reach my social network (e.g., friends, family members)";
(iv) "Digital communication tools help me to have more contact with other farmers and talk about my work".

Measuring the "Management Dimension": The Integration with New Media to Keep Track of, Promote, or Manage Work

To measure the extent to which young farmers are engaged in the management dimension, six statements were developed, and all statements were rated on a five-point scale ranging from "not at all" to "to a very high degree":

(i) "My farm has a webpage that is active on a regular basis";
(ii) "I use social media for my work (e.g., Twitter, Instagram, Facebook)";
(iii) "I employ digital specialist(s) for my work (e.g., for webpage design, to use specific software or e-commerce applications)";
(iv) "I use the internet for selling my product(s)";
(v) "I use online farm management mobile applications on my farm (e.g., for crop monitoring, fertilizer and/or pesticide application, harvesting)";
(vi) "I use e-government services".

Measuring Work Engagement and Professional Identity

Group-I, work engagement statements include five statements from UWES as (1) vigor with (i) "*I do my job with energy*" and (ii) "*I like to learn something new about my work*"; (2) dedication with (iii) "*I'm enthusiastic about my work*"; (iv) "*I'm proud of my work*"; and (3) absorption with (v) "*I feel happy when I'm working*".

Group-II, professional identity statements, comprised (vi) "*I believe that the prestige of farmers is increasing in society*" (developed from the farmer identity studies) (vii) "*I believe that it is definitely a good time to be a farmer*" (inspired from the title of the study of Chiswell and Lobley 2018 on young farmer successors in the late modern society); (iix) "*I believe that the young generation needs to be more involved in farming as a profession*" (stimulated from the literature on "lack of generational renewal" and "young farmer problem").

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ANNEX B

Profiles of the Participants in the Qualitative In-Depth Interviews

In terms of farmer characteristics, three young female and 18 young male farmers were interviewed. Eight farmers have a university-level education, with the majority having an education in non-farming-related disciplines, including law, engineering, sociology, management, graphic design, and computer science. In total, 15 participants come from families involved with full- or part-time farming, and six participants report that their families are at least two generations removed from farming. A total of 16 participants report that all of their income comes from farming activities. The part-time farmers ($N = 5$) state that a part of their income comes from other farming businesses (e.g., in agri-tourism, as a farm adviser at agriculture-related associations) as well as non-farming businesses (e.g., working for the public sector, the navy, or in the tourism sector).

Regarding farm characteristics, considering the scale of the two islands, the participants identified the size of their farms as very small, small, medium, or large. In Crete, participants were mainly involved with mixed farms (olives, honey, and wine), fruits, avocados, greenhouses, and olive farms and wine production. In Cyprus, the participants were involved with farms comprising vegetable and fruit farms, animal farms (rabbit and goats), wine production, as well as bees and fresh-cut flowers.

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