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The efficiency of mobile messaging tools in sharing agricultural entrepreneurship knowledge and information among agricultural students, graduates, and entrepreneurs

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Abstract

Since agriculture is the most important sector for providing people's livelihoods and plays a significant role in production and productive employment, the importance of agricultural management and investment becomes even more pronounced in the current economic conditions of Iran, characterized by notable features such as unemployment, stagnation, and limited investment. Strengthening agriculture and creating change in agricultural production and natural resources will lead to non-agricultural employment, increased income, and greater demand for local agriculture and non-agricultural products. Entrepreneurship education can be one of the most effective ways to facilitate individuals' transition into the job market. Continuous access through mobile devices provides special facilities such as sending and storing learning content and enhancing knowledge, thereby ensuring the continuity of education. The aim of this research is to examine the impact of mobile messaging tools for sharing knowledge and information on agricultural entrepreneurship. To achieve this goal, interviews were conducted with 30 members of agricultural entrepreneurship groups. In these interviews, individuals reported on their familiarity with new agricultural business ideas, awareness of entrepreneurs in various fields, disturbances caused by messages sent at unusual hours, increased motivation to start new businesses, enhanced knowledge and information regarding agricultural enterprises, increased interest in entrepreneurship topics, familiarity with new agricultural business concepts, expanded communication networks, easier communication with others, receiving answers to specialized and professional questions within the group, time wastage, and limitations of mobile memory as outcomes of sharing knowledge and information on entrepreneurship in agricultural entrepreneurship groups. Finally, suggestions have been presented.

Keywords: Agricultural entrepreneurship knowledge and information, virtual communities, virtual groups, mobile messaging tools.

Introduction

As agriculture is crucial for supporting people's incomes and plays a key role in production and job creation, the significance of managing and investing in agriculture is particularly emphasized in Iran's current economic situation, marked by issues like unemployment, stagnation, and low

investment levels. Improving farming and promoting innovation in agricultural production and natural resources will result in more jobs outside of agriculture, higher earnings, and heightened interest in both local agricultural and non-agricultural goods. Therefore, agricultural entrepreneurs can seize opportunities by correctly identifying them and making use of unused resources. Through organizing and controlling resources, individuals are able to put their ideas into action; as they do so, they not only secure employment for themselves but also generate jobs for others in the private sector independently of government support (Rokneddin Afkhami et al., 2010). An assessment of the state of agriculture higher education and agricultural sector graduates in the country shows that a key issue is fostering entrepreneurial skills among students and graduates in this field. Teaching young people about entrepreneurship is considered an investment in their future, exposing them to positive experiences which can help them make smarter career choices later on (Noorbakhsh and Tandost, 2008).

Entrepreneurship education is among the most effective methods to help individuals transition into the job market. Research conducted in Europe has demonstrated that this type of education leads to increased responsibility and can turn individuals into successful entrepreneurs or innovative thinkers in the field of entrepreneurship, equipping them to navigate the challenges of conducting business in a volatile environment. Today, the importance of entrepreneurship education is evident in its ability to raise awareness about entrepreneurship and business skills, shape attitudes, and impact entrepreneurs' views on job security, social status, income opportunities, and economic landscape knowledge. The increase in entrepreneurship and the success of entrepreneurship education, along with the rise of specialized entrepreneurship training, demonstrate that entrepreneurship education has not only increased the number of entrepreneurs but has also led to a change in entrepreneurial generations and a boost in entrepreneurial skills (Henry et al., 2005).

Education on entrepreneurship has the potential to greatly impact those starting in the workforce, and online communities can also be a pivotal component in sharing knowledge and learning (Tamjidyamcholo et al., 2014). When determining the requirements for starting an entrepreneurial venture, the creator should be aware of the surroundings and knowledgeable about the potential solutions that have been suggested globally to meet those requirements. Hence, information and knowledge, similar to communication, play a crucial role in all entrepreneurial endeavors (Hojjati, 2004). Entrepreneurs consider the internet one of the essential tools in developed nations. Individuals improve their skills and make use of the network's benefits. At the same time as the internet has been evolving, there have been similar progressions in the area of "entrepreneurship education." The progress in entrepreneurship education programs and the creation of new businesses have been impressive and worthy of attention (Jalili et al., 2012).Virtual communities can play a crucial role in education and knowledge

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sharing (Tamjidyamcholo et al., 2014), representing a group of individuals or business partners who can interact and share their interests and experiences (Elise Porter, 2004).

One of the spaces that provides opportunities for entrepreneurial learning is virtual environments. The virtual space facilitates the formation of new communities among users. The ability for a young person to connect with peers in other countries has turned these networks into places where new ideas can be introduced and discussed (Yazdanpanah, 2010). Generally, these spaces have created opportunities for increasing individuals' awareness and even generating employment for some (Ibrahimpour and Khazaei, n.d.). The expansion of virtual spaces, like other types of transformations and advancements, has produced various positive and negative consequences in society and the lives of users of these spaces. The most positive outcome can be seen in the facilitation and acceleration of communication and information exchange (Bozogvari, 2009). Virtual communities require an understanding of related communication tools such as mobile phones, text messaging, the internet, national data networks, and their tools like social networks, virtual organizations, and the role of information and communication technology and its wide applications in providing electronic services. Individuals in virtual communities utilize information and communication technology to share their competencies and complementary capabilities to achieve a common goal (Jalali, 2010).

Research Methodology

In the qualitative portion, 30 group members were interviewed extensively, chosen through non-probability sampling of the extreme or boundary type (based on minimum and maximum participation in the groups).

The method of boundary or extreme sampling is frequently used in qualitative research. This method of sampling allows the researcher to conduct various comparisons. In order to conduct the research, a visual representation of units must be created and the boundary cases should be included in this distribution (Ranjbar et al., 2012).

In this part, the qualitative approach was utilized to determine the effects of disseminating knowledge and information on agricultural entrepreneurship. The raw data was analyzed, and each concept was reviewed in conjunction with quotes from the interviewees. Observations were recorded according to the predetermined questions. Quotes were extracted from each person's statements after multiple listening, and the data was then analyzed using the specified methods.

Coding: The gathered information, including statements made by the interviewees, was thoroughly examined in this approach. From these statements, ideas were identified. While coding, the data was reviewed and 11 concepts related to sharing knowledge and information on agricultural entrepreneurship were identified.

Counting: In this method, the data are counted. In other words, if specific words are

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repeated in the text or during an individual's speech, they are counted and ultimately interpreted.

Concepts

Knowledge and Information

Over time, human resources gather a range of thoughts, ideas, skills, experiences, and applied sciences. Every individual's knowledge is made up of a collection of information stored in their mind, preventing others from accessing or utilizing it as long as it remains there (Pour Srajian et al., 2013). Knowledge is the comprehension, consciousness, or perception that develops in a person through research, observation, or experience about the outside world, and it goes beyond simply having information. (Hosseini and Pour Asadi ,2011) Currently, knowledge is a crucial factor in determining the success of businesses (Akhavan et al., 2010). Knowledge is the mental recording of ideas, facts, concepts, data, and techniques in human memory, as described by Mirzabegi in 2005. According to Gammelgaard and Ritter (2000), knowledge is a dynamic blend of structured experiences, beliefs, conceptual knowledge, and expert insights that create a basis for assessing and incorporating fresh experiences and information. Knowledge is the sole asset that gains value through sharing, with growth occurring when it is distributed and shared (Pour Srajian et al., 2013).

Data and information should be distinguished from knowledge. Data comprises unprocessed information, such as facts, measurements, statistics, and figures. Data is made up of established truths taken directly from the outside world, showcasing observations or actualities. Data becomes information when it is placed in a meaningful context, typically taking the form of a message. Information is transformed into knowledge when it is utilized to attain higher profits, additional worth, or to generate value (Hosseini and Pour Asadi, 2011). Information that individuals process, including ideas, beliefs, experiences, expertise, personal judgment, and organizational performance, is known as knowledge (Wang and Noe, 2010). Knowledge is not just information, it also includes the process of knowing. Data becomes information when it is organized in a meaningful way, resulting in processed or meaningful data that leads to knowledge, typically presented objectively (Bagheri and Salajegheh, 2010).

Nonaka (1994) regards information merely as the process and flow of messages. Knowledge originates from the human brain and is based on information transformed and enriched by experiences, systematic specialized knowledge, personal beliefs and values, along with individual decisions and actions. This information is interpreted by the individual and applied as needed (Samadi Miyarkalayi and Samadi Miyarkalayi, 2012), providing a framework for evaluating and utilizing new experiences and information (Sarlak and Islami, 2011). Information refers to relevant and purposeful data. In other words, data alone are not relevant and purposeful; rather, they are considered a form of a message. Thus, having context and purpose is a characteristic of information (Rafati Shalhdei et al., 2008).

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Entrepreneurial Knowledge and Information

Entrepreneurship education seeks to equip individuals with the necessary knowledge, skills, and drive to pursue entrepreneurship. Entrepreneurship education provides individuals with chances, perspectives, information, and abilities for empowerment, serving as a valuable tool for knowledge and skill enhancement (Sondari, 2014). Certain studies suggest that the initiation of a business is reliant on the implicit knowledge and skills of individuals. Researchers have stressed the importance of entrepreneurship programs in enhancing individuals' entrepreneurial abilities. In their study from 2005, Henry and colleagues pointed out that entrepreneurship programs aim to support willingness (the desire to start a business) and ability (having the skills and knowledge to run a company). The entrepreneurial mindset is being seen more and more as a valuable source of information and creativity in understanding how people can start new businesses (Scuotto and Morellato, 2013).

Entrepreneurial Knowledge

Entrepreneurial knowledge involves recognizing business opportunities, types of investments, financial resources, marketing techniques, and production activities (Oriarewo et al., 2013). The process of acquiring entrepreneurial knowledge involves individuals gaining information about customers, technologies, products, finances, research, marketing, and starting a new business. Some business owners actively look for chances to explore, collect data, analyze it, and gain entrepreneurial expertise (Jawahar and Nigama, 2011).

Entrepreneurial knowledge is the expertise and understanding that individuals have in starting a new venture and participating in certain tasks. It is a determinant that impacts people's feelings about beginning a company and motivates them to improve their entrepreneurial projects (Scuotto and Morellato, 2013; Draghici, 2014). Additionally, entrepreneurial knowledge refers to the combination of theoretical understanding and hands-on experience in forming and evolving a specific mindset over a period of time (Baghersadeh et al., 2013). The knowledge utilized in entrepreneurial and innovative endeavors across different sectors originates from diverse origins.

The development of new knowledge, the application and introduction of new information and knowledge require a significant workforce and continuous efforts in innovation and entrepreneurship within organizations (Hami, n.d.). The content of the knowledge that a forward-thinking entrepreneur encounters should significantly impact their entrepreneurial intentions (Dohse and Walter, 2012). There are three primary sources of information related to the entrepreneurial process: research-based sources, direct observation of entrepreneurs, and speeches by entrepreneurs.

Research-based sources may include scientific journals, biographies of entrepreneurs, news articles, magazines, and publications (Eke et al., 2011). Resources that may be within or outside the entrepreneurial company include family members and

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relatives, friends, current colleagues, the current boss, individuals living in another country or from a foreign country, those starting a new business, those with extensive business experience, researchers or inventors, potential investors, banks, lawyers, accountants, business consulting service centers, companies that the entrepreneur collaborates with, companies that compete with them, suppliers, and customers. One key method people gather information about entrepreneurship is by leveraging their social connections. The configuration of social connections pertains to the arrangement and linkage of individuals. In simpler terms, social relationships refer to the bonds and associations among people (Adler and Kwon, 2002). In this study, entrepreneurial knowledge pertains to individuals' understanding, experiences, and abilities in entrepreneurship and their specific business sector, while information consists of structured details, facts, and data related to agricultural entrepreneurship.

Knowledge and Information Sharing

Knowledge sharing means making one's knowledge available to others, naturally and voluntarily disseminating acquired skills and experiences to other individuals. It is important to note that knowledge sharing can occur not only between one person and another but also between individuals and groups or between groups and individuals, where individuals share their ideas and insights. Therefore, it is universally agreed that knowledge sharing is a factor that leads to work and objectives, and it is a process through which individuals share knowledge, experience, and resources through collaboration and participation, communication mechanisms, and opportunities (Lin, 2014; Ngai, 2008; Law). It is a social phenomenon that relates to human interactions (Cao and Xiang, 2012). Hong et al. (2011) state that knowledge sharing is a process through which knowledge is transformed in a way that can be understood, absorbed, and utilized by others. Additionally, Hung and Cheng (2013) assert that the goal of knowledge sharing is to improve individuals' capabilities and effectiveness. A person sharing their knowledge must be aware of the purpose of the knowledge, its uses, and the requirements and needs of the person receiving the information. Otherwise, the knowledge may be transferred to someone who does not need it and will not be utilized (Keshavarzi, 2006).

Knowledge sharing is only possible when the culture of the society encourages it. The culture of knowledge sharing is defined as the willingness of individuals to make their information available to others (Seyedjavadin et al., 2010). Knowledge sharing involves both the transfer of information to the recipient and its absorption and transformation by the person or group receiving the information (Anvari and Shahabi, 2008). McDermott (1999) describes knowledge and information sharing as follows: when we say an individual shares their knowledge and information, it means that this person guides another individual using their knowledge, insights, and thoughts to help them see their situation more clearly. The concept of sharing and disseminating knowledge encompasses the sharing of

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values, existing information, and systematic expert attitudes that provide a framework for evaluating and utilizing experiences and new information. Through interactions between individuals, continuous and face-to-face communication in activities and discussions allows individuals to become aware of existing knowledge and their educational needs (Hosseini et al. 2013). Knowledge and information sharing enables individuals to obtain appropriate feedback, and by sharing their expertise, they can provide valuable insights for problem-solving, thus laying a foundation for knowledge production and scientific advancement (Haeussler et al., 2014). In defining knowledge and information sharing in this research, McDermott's (1999) definition has been considered. Therefore, knowledge and information sharing in entrepreneurship refers to the process of transferring experiences, thoughts, specific skills, news, facts, and organized data about entrepreneurship among individuals, enabling them to see themselves in a better position.

Groups and Virtual Communities

Today, many people use internet networks for message exchange or other activities. This technology has eliminated temporal and spatial distances, granting significant power to humanity. Information is produced by various sources, stored in suitable repositories, processed as necessary, and then transmitted to other locations using public communication networks. Such a cycle illustrates an information system whose main components are information, hardware, software, communication devices, and humans (Ayati and Mohammadzadeh, n.d.).

Virtual communities

Virtual groups consist of individuals who are geographically dispersed and can analyze events through information exchange (Paul and McDaniel, 2004). In these groups, individuals collaborate and share their valuable goals (Kanawattanachai and Yoo, 2002). Participants in virtual groups feel that they are part of a social group, much like their colleagues in the real world. In virtual groups, individuals can interact hierarchically without time constraints (Severino, 2010), and they can assess their knowledge and understanding by sharing ideas, questions, and information.

Creating security, mutual respect, and honesty among group members is crucial, especially considering that group members are located in different geographical, physical, temporal, and linguistic contexts. From the moment a group is formed, members have specific expectations, and the group must enhance its productivity for sustainability. Low trust among individuals in groups leads to reduced communication and limited information exchange (Kuo and Yu, 2009).

In virtual groups, individuals need access to various resources to exchange, negotiate, and solve their problems together. In general, virtual groups are defined as groups that: 1) are geographically distributed; 2) interact electronically through computer communications; 3) differ in functionality; and 4) operate within a temporary system (Kanawattanachai and Yoo, 2002). In virtual

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groups, members interact to achieve common goals, and each member reports to a manager. In contrast, a virtual community is a larger entity of distributed work in which members participate through the internet and are guided by shared objectives, rules, and norms (Ale Ebrahim et al., 2009).

Virtual Communities

Virtual communities are not limited to a specific time or place (Chang and Chuang, 2011). These communities, formed on the internet, are utilized to meet individuals' needs for communication and the sharing of knowledge and information (Hosseini et al., 2013). Communities are one of the most effective spaces for knowledge sharing (Loizou and Dimitrova, 2013), where individuals interact with each other to achieve a common goal and use these communities for various activities such as sharing knowledge and exchanging messages.

In virtual communities, a group of individuals with shared goals and interests shares their knowledge and information (Ko et al., 2004). One interesting aspect of interaction in virtual communities is that it is primarily text-based, although other types of communication (e.g., visual or auditory) are also possible. Furthermore, text-based communication in virtual communities differs from other types of written communication (Malek Ara, n.d.). Virtual communities can also be viewed as social entities composed of individuals who come together to share common topics, interests, and information. The flow of knowledge and information in virtual communities provides a framework for production and reception through discussions and reciprocal sharing (Hung and Cheng, 2013).

In an informational environment, individuals share what they know through personal relationships or various media, creating and utilizing information (Babayi and Fahimi Far, 2012).

Mobile Messaging Tools

Mobile technology is a form of information and communication technology that, similar to other communication technologies, has made its way into the educational sector and is known as mobile learning. This tool of communication has changed the conventional way of face-to-face learning, offering a fresh interpretation of education. Most individuals view the mobile phone as their own device; even if they use computers or laptops less often or don't have their own computer, they typically have a mobile device.

Designing efficient and compact software applications that can be installed on mobile phones can provide educational content to learners anytime and anywhere. When learners receive messages before the training, they have more time to reflect on and respond to the information they have received. Additionally, portions of content sent via text messages are more easily absorbed. In such circumstances, the role of distance in education diminishes, and the learning process, along with continuous assessment, becomes more sustained. The use of mobile technology in a formal learning environment

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in Singapore in 2001 indicates a system for instant feedback of information (Shah-Mohammadi and Kouhi, 2013).

Today, the functionalities of mobile phones are rapidly developing, to the extent that communication on the move and without physical presence is just one of its significant features. Constant access to information and its exchange, the provision of urban services through mobile phones, entertainment, personal information storage, mobile commerce, music and video streaming, photography and videography, and the enhancement of mutual relationships between citizens and the government are just a small part of its expanding functionalities (Heydari and Salehi, 2010).

Mobile phones are important for youth as they help create a feeling of social connection and allow them to show where they stand in their social group (Fattahi Bayat, 2006). WhatsApp, Viber, Hike, Line, WeChat, Telegram, Bittalk, KakaoTalk, Instagram, Beep Phone, Tango, ChatOn, Sayna, Google Talk, Google Hangouts, TextSecure, Palringo, Oovo, Libon, Trillian, UpTalk, Kik, and Snapchat are some of the mobile messaging tools available. As this study involves WhatsApp and Viber, a thorough description of both platforms will be provided.

WhatsApp

WhatsApp is a mobile messaging service that was founded in 2009 by former Yahoo employees within the WhatsApp Inc. company (Mahajan et al., 2013). The founder of the company and the creator of the application is Jan Koum. WhatsApp Messenger is a software platform for Android, iPhone, Nokia, and BlackBerry smartphones (Okanovic et al., 2014; Schrittwieser et al., 2011). This messenger uses data or WLAN (Wi-Fi) connections to send messages (Azhana and NoorAzian, 2012; Reuver et al., 2015). With the expansion of mobile internet, WhatsApp and similar software have become replacements for SMS or classic text messages. WhatsApp enables message sending through 3G networks and Wi-Fi. The maximum size of media files sent via WhatsApp is 16 megabytes, and 750 million photos are shared every day through it (Aal et al., 2014). Additionally, more than 10 billion messages are sent daily (Okanovic et al., 2014).

In 2013, WhatsApp had 450 million users worldwide who were online at least once a month. In addition to sending text messages, users can send photos, audio files, and videos (Mahajan et al., 2013; Aal et al., 2014; Ahad and Lim, 2014; Wang, 2015) and share the geographic location of the sender's phone, identified via GPS and mobile phone antennas. Multimedia messages can also be transferred using mobile internet or Wi-Fi (Singh, 2014). WhatsApp reads user information and contacts from the phone's address book, so there's no need to manually enter contacts into the software. Like common email services such as Gmail, WhatsApp is free to use.

On February 19, 2014, Facebook announced that it had purchased WhatsApp for $19 billion, of which $4 billion was paid in cash and $15 billion in Facebook shares to the owners. WhatsApp-related files are stored on the phone's internal memory; however,

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images, videos, and audio files downloaded via WhatsApp are stored in an external memory folder named WhatsApp. Furthermore, the user's status, phone number, and name (Mahajan et al., 2013; Reuver et al., 2015), as well as WhatsApp data in general (Sahu, 2014), are saved on the phone's internal memory. WhatsApp automatically displays message delivery reports, online status, and the last seen status of users, though users can disable this feature to avoid being seen by others (Azhana and NoorAzian, 2012; Buchenscheit et al., 2014). It also shows when a user is typing (Church and Oliveira, 2013). Another feature of WhatsApp is that it is always running, and when there is no internet connection, messages are stored and sent to users once the connection is re-established (Eroglu and Okur, 2014).

Viber

Viber is an instant messaging and Voice over Internet Protocol (VoIP) software for smartphones, developed by Viber Media (Singh, 2014). In addition to text messaging, users can exchange images, videos, and media messages (Aal et al., 2014). Viber works on 3G mobile networks and Wi-Fi (Reuver et al., 2015). To use the app, Viber must be installed on a phone. By May 7, 2013, the number of Viber users had reached 200 million. Viber was founded by four colleagues in Israel: Talmon Marco, Igor Megzinik, Sani Maroli, and Ofer Smocha (Singh, 2014). On February 14, 2014, Viber was purchased by Rakuten for $900 million, and on May 8, 2012, it was made available for Windows Phone and BlackBerry devices. Upon reaching 50 million users on July 24, 2012, group messaging and a high-quality voice engine were added to both the Android and iPhone apps. On the same day, it was announced that the software would also be available for Nokia Series 40, Symbian, and Samsung's Bada operating system. Initially, the voice calling feature was only available on iPhone and Android apps, with a promise that voice calling would be added to future versions of the Bada, Symbian, and Windows Phone apps, but there was no mention of BlackBerry OS or Nokia Series 40. This limitation seems to be due to the core structure of BlackBerry OS and Nokia Series 40, which do not easily support VoIP applications (Okanovic et al., 2014).

On September 22, 2012, high-quality voice calling and group messaging became available for Windows Phones on Nokia devices as part of an exclusive partnership with Nokia. The main features of this app on Android, iOS, and Windows Phone include voice calls via the internet, sending photos, emoji, and text messages (Aal et al., 2014). This app is completely free for users. To register, users must provide their mobile phone number, and a code to access the app is sent via SMS. Users can also install the app on their PCs or tablets using the same phone number. Viber identifies other users who have installed the app from the phone's address book and adds them to the friend list within the app. The new version of this app allows users to add new emoji, some of which are free and some available for purchase (Reuver et al., 2015).

Findings from Qualitative Analysis

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Individual Characteristics

Based on the research data presented in Table 1, the interviewees were categorized by gender, entrepreneurial or non-entrepreneurial status, age, and education level, and their participation levels were identified according to these characteristics. In terms of gender, 5 of the interviewees with the highest participation were women, and 7 were men. Among the interviewees with the lowest participation, 12 were women and 6 were men. Regarding entrepreneurial status, from the group with the highest participation, 5 were entrepreneurs and 7 were non-entrepreneurs, while in the group with the lowest participation, 17 were non-entrepreneurs, and only 1 was an entrepreneur.

The average age of individuals with the highest participation was 32.25, and the average age of those with the lowest participation was 27.56, indicating that individuals with the highest participation were older. The average education level of individuals with the highest participation was 16.17 years, while the average education level of those with the lowest participation was 14.94 years, showing that individuals with the highest participation had a higher education level.

Table 1- Overview of certain personal traits of the individuals interviewed

People with lowest participation (n=18)	Cases	People with highest participation (n=12)
men 6 ،women 12	Gender	Men ۷ ،women 5
27/56	Age	32/25
non-entrepreneurs, an 17 entrepreneur	To be an entrepreneur or non-entrepreneur	entrepreneurs, 7 non- 5 entrepreneurs
14/94	Level of education	16/17

Outcomes of Sharing Entrepreneurial Knowledge and Information in Entrepreneurial Groups

Both groups were asked about the outcomes of sharing entrepreneurial knowledge and information in the groups. Some of the outcomes mentioned by both groups (those with minimum and maximum participation) included easier communication with others, the inconvenience of receiving messages at odd hours, wasted time, expanding networks, learning new agricultural business ideas, and the limitation of phone memory. However, the group with minimum participation also identified additional outcomes, such as getting to know entrepreneurs from various fields, increased motivation to start a new business, enhanced knowledge and information regarding agricultural businesses, increased interest in entrepreneurial topics, and receiving answers to specialized and professional questions within the group.

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Overall, those with minimum participation pointed to a wider range of outcomes, while those with maximum participation mentioned only a limited set of outcomes. The outcomes and quotes from the interviewees are discussed in the following section, and the frequency of concepts for both groups is presented in Table 2.

Getting to Know Entrepreneurs in Various Fields

Getting acquainted with entrepreneurs from various sectors was a result of exchanging entrepreneurial knowledge and information within the groups. Interviewees provided insights and stories about this subject.

I met a lot of individuals within the group. I gained insights from their experiences, and I believe it would be beneficial to invite a larger number of people to the group and allocate more time for guests. In general, I've gained much knowledge from the content shared and I actively keep up with the group. I have learned about several agricultural concepts that were previously unfamiliar to me.

I have developed numerous friendships within this group, and a few of them have now become close friends. I met entrepreneurs, with some being well-known in the country. I am delighted that I have the ability to contact the CEO of a specific company at any time, and he is willing to communicate with me. Being part of his group gives me unique credibility, leading him to allocate time to spend with me. I find it very valuable that I can ask these individuals my questions at any time.

"One of the advantages of being in these groups was getting to know agricultural entrepreneurs who owe their success to creative thinking and perseverance."

"It's not like I've always been satisfied with the group programs. In the beginning, the program wasn't good at all. Any discussion was raised in the group except for topics related to agricultural businesses. But fortunately, over time, it got much better. Gradually, the program became more academic, especially when entrepreneurs were invited, and the program improved significantly. I really enjoyed the discussions with the guests, although there were some issues, such as the limited time for discussions with guest entrepreneurs. Of course, I've concluded that everything can be improved over time."

"The main problem with this program is related to the guest entrepreneur section. I always felt bad when the guest couldn't fully express themselves. The discussion became scattered. So many scattered questions were asked that the guest didn't know what to say. It would be great if there was a way for everyone to download the audio file. That way, instead of typing, the guest could record their voice and send it, which would speed things up and allow us to benefit more. Typing slows down the process."

"I gained a lot from the guest section. It was really interesting. The discussions, especially those with guests who talked about new agricultural topics and technologies, were very attractive and fascinating to me."

Increased Motivation to Start a New Business

Another outcome of sharing entrepreneurial knowledge and information mentioned by individuals was increased motivation to start a new business. Participants expressed the following:

"Being part of this group made me think more creatively about starting some businesses, and it increased my motivation to start agricultural businesses, even if I don't actually launch one. Since agriculture is a family tradition, and most of my family members are engaged in it alongside their primary jobs, many of the discussions about modern agricultural issues, products, and new methods can be shared with other family members."

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Increased Knowledge and Information about Agricultural Businesses

Another outcome of sharing entrepreneurial and agricultural knowledge and information was the increase in knowledge about agricultural businesses. Participants in the interviews stated:
"This group has had many outcomes for me. Every day, I learn something new. I get introduced to new topics in agriculture every day. It has given me a huge motivation to pursue different topics daily. I'm hungry for learning new things in agriculture. I want to find good content every day that I can share in the group, so everyone can benefit from it and learn something new, and I can contribute meaningfully."

"I really enjoy this work, and it's very useful. Since joining these groups, I've been very satisfied. It's a great idea that people like me can make the most of the experiences of successful and experienced individuals, and this has even increased my motivation in agricultural businesses and enhanced my knowledge in this field."

"I didn't have much awareness of agricultural entrepreneurship and related topics before. But I would check the group and read the messages, and each time I checked, I found more interesting topics than the previous time. Sometimes I had questions, and when I visited the group, I found the answers by reading others' comments and the topics they raised. These discussions have increased my knowledge and awareness compared to before."

"Since experts in agriculture are group members and share their opinions, I found their views interesting and helpful. I've reflected on their opinions and topics, which have somewhat increased my knowledge about entrepreneurship, and these discussions have given me new ideas and sparked my interest in entrepreneurship and entrepreneurial learning."

Increased Interest in Entrepreneurship Discussions

It can be said that increased interest in entrepreneurship discussions is one of the outcomes of sharing knowledge and information in agricultural entrepreneurship groups. Participants shared:
"I am very satisfied with these groups, and I am one of those people who constantly participate. This group has a very special place in my life. I plan for it, and at specific times, I check the group. During these times, I either read the content or actively participate. Since joining this group, I feel more capable and interested in some areas. I'm constantly searching for useful content to share in the group, and I'm learning a lot. I even feel like my learning approach has changed. I'm constantly learning, and my perspective on various topics has broadened. I can say that I'm learning exponentially in this group."

"At first, I joined the group without much interest, but after a while, I became interested in the discussions. Eventually, I started participating in the discussions myself, and I found it fascinating. If I were to mention one of the best outcomes for me, it would be my newfound interest in agricultural businesses. This interest has grown to the point where I'm even considering starting a business in agriculture."

"I enjoy the entrepreneurial and agricultural discussions. When I read the topics my friends share, I find them interesting, which has sparked my interest in entrepreneurship. On the other hand, I've also started researching those topics myself. Through this research, I've discovered many interesting

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and useful things about entrepreneurship that I didn't know before, and being part of this group has been very beneficial for me."

Familiarity with New Agricultural Business Ideas

Another outcome mentioned by individuals regarding the sharing of agricultural entrepreneurial knowledge was the familiarity with new agricultural business ideas. Participants noted:

"The content shared in this group is definitely useful because everyone who participates has some expertise in agriculture and can offer diverse and helpful perspectives. What's interesting is that many individuals view agricultural issues from different angles. Each one has a specific position in the agricultural sector, which gives a comprehensive understanding of agricultural issues in Iran. Since the members of the group come from different parts of the country, this perspective becomes even more comprehensive."

"One of the outcomes for me from being in this group is that I've become familiar with interesting issues in agriculture. I've learned a lot, and various ideas were discussed that I really liked. For example, one issue that was raised in the group, which I found particularly interesting and still think about, was the different ways of packaging fruits for various purposes, such as gifts or parties, and I would like to learn more about it."

Expansion of Networking

Participants also highlighted the expansion of their network as an outcome of sharing entrepreneurial knowledge and information. For instance, they stated:

"My connections with others have increased, and now I can discuss agricultural businesses with them more often. Before, I knew fewer specialists in agriculture, but now I know more people from all over the country."

"Before joining this group, when I had questions, I didn't get proper answers from anyone. But since joining, not only do I benefit from the discussions and topics, but also because I'm part of this group, I get better answers from specialists, whether in private messages or openly in the group."

Easier Communication with Others

One of the other outcomes of sharing knowledge and information in agricultural entrepreneurship groups, as mentioned by participants, was easier communication with others. They shared:

"Since I joined this group, it has become easier for me to communicate with others, and thanks to these groups, I can find answers to my questions more quickly."

"Before joining this group, I rarely voiced my opinions in front of others, but now I can do it more easily. This has boosted my confidence, and now I'm not afraid of my ideas being rejected by others, so I feel more comfortable sharing my thoughts."

Receiving Answers to Professional and Technical Questions

Another outcome of sharing knowledge and information in agricultural entrepreneurship groups, as mentioned by participants, was receiving answers to professional and technical questions. Some individuals expressed:

"Sometimes, during the entrepreneur guest sessions, due to time constraints, some questions were not answered, and some members didn't get their questions addressed.

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Also, at times when I asked questions in the group, I expected a proper and useful response, but unfortunately, either I received no response or got irrelevant and confusing answers."

"There were some entrepreneurs who, when asked a question, responded very clearly and helpfully, but others either lacked expertise or, for other reasons, did not answer members' questions."

"During the guest entrepreneur sessions, sometimes the discussion would become two-sided, preventing others from participating. Many times, I had lots of questions, but there was never enough time to ask. Even when I did ask, my questions often went unanswered. Occasionally, discussions between members would happen that could have continued privately; there was no need to bring them up in a group setting where many people were present, as those topics might not be relevant to everyone."

Wasting Time

From the participants' perspective, wasting time was one of the outcomes of sharing knowledge and information in entrepreneurial groups. They mentioned:

"Sometimes a long message would be posted in the group, and I thought it would be useful for me, but after reading it, I realized it had nothing to do with my field, and I had wasted my time."

"There were also conversations in the group between members that were really bothersome. For example, long discussions between two people would go on for hours, which annoyed others. Even though the group admin tried to control some of the disorder, some unpleasant things would still happen in the group, such as people messaging each other throughout the night. While it was possible to turn on the 'silent mode,' I preferred not to, so I could participate in discussions as soon as they started, but the late-night messages forced me to keep my phone on silent all the time."

Annoyance from Messages Sent at Inappropriate Hours

Another outcome mentioned was the annoyance caused by messages sent at inappropriate hours. Interviewees said:

"One of the group's rules was that no messages should be sent between 11 PM and 7 AM, but some members didn't follow this rule and sent irrelevant messages in the middle of the night, disturbing other group members. Some members would even immediately leave the group because of this."

Limited Phone Storage

Another issue brought up by participants was the limited phone storage caused by the large amount of shared files. They stated:

"Some members shared a lot of audio and video files in the group, which filled up my phone's memory and used up my internet data. My phone would freeze, and I had to delete the group. I even had to delete and reinstall the app and then ask the admin to re-add me to the group."

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Table 2- Examining the consequences of sharing entrepreneurial knowledge and information in entrepreneurial groups with the counting method

Highest participation	Lowest participation	Concepts
·	15	Getting to Know Entrepreneurs In Various Fields
·	12	Increased Motivation to Start a New Business
·	15	Increased Knowledge and Information about Agricultural Businesses
·	10	Increased Interest In Entrepreneurship Discussions
·	17	Familiarity with New Agricultural Business Ideas
9	7	Expansion of Networking
5	6	Easier to communicate with others
·	14	Receiving Answers to Professional and Technical Questions
8	9	Waste of time
10	13	Annoyance from Messages Sent at Inappropriate Hours
5	10	Limited Phone Storage

Discussion and Conclusion

The introduction of mobile phones has brought many conveniences to the communication era. While there have been several studies on the influence and importance of mobile phones in education, no research has explored how mobile phone tools affect the exchange of knowledge and agricultural information for entrepreneurship.

The results of interviews with members of virtual groups showed that more individuals highlighted the outcome of becoming acquainted with entrepreneurs in different fields. Additionally, the findings indicated that various outcomes such as familiarity with new agricultural business ideas, connection with entrepreneurs in various fields, disruption caused by messages sent at inappropriate times, increased motivation to start a new business, increased knowledge and information in the field of agricultural businesses, enhanced interest in entrepreneurship discussions, expanding communication networks, easier communication with others, receiving answers to specialized and professional questions in the group, time wastage, and limited phone memory were all noted as consequences of sharing entrepreneurial knowledge and information in agricultural entrepreneurship groups.

Among these outcomes, time wastage, limited phone memory, and disruption from messages sent at inappropriate hours were considered negative consequences, while the

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rest were deemed positive. By implementing better management and stricter rules, such as removing individuals who send messages outside the designated hours or those who share irrelevant content not aligned with the group's objectives, these negative consequences can be reduced, and the efficiency of the groups can be improved. Furthermore, creating separate working groups for entrepreneurship and agriculture, inviting experienced individuals to the groups, proposing topics by group members, and extending the time for guest speakers can enhance group performance.

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