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UNRAVELLING THE MEDIATING ROLE OF RISK PERCEPTION IN AGRICULTURAL ENTREPRENEURIAL INTENTIONS

QISHLOQ XO'JALIGI TADBIRKORLIK NIYATLARIDA XAVFNI IDROK ETISHDA VOSITACHILIK ROLI

РАСКРЫТИЕ ПОСРЕДНИЧЕСКОЙ РОЛИ ВОСПРИЯТИЯ РИСКА В НАМЕРЕНИЯХ СЕЛЬСКОХОЗЯЙСТВЕННОГО ПРЕДПРИНИМАТЕЛЬСТВА

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Abstract: Promoting agricultural work is crucial for Pakistan's long-term economic growth. The main objective of the study is to investigate the relationship between entrepreneurial education, self-efficacy, social network, business angels, and agricultural entrepreneurial intentions with mediating role of risk perception under Martin Fishbein's theory of reasoned action, as well as Jacob Moreno's social network theory. The researcher selected a sample size of 400 for appropriate research work by using random and convenient sampling techniques. The questionnaire was used to collect data from the entrepreneurs of agri-businesses. After collecting data, two separate data sheets on Excel were prepared, codded and fed to be analysed using the software SPSS 23 for descriptive statistics analysis (mean, frequencies, and standard deviation) and SmartPLS 3.0 for the two-step PLS-SEM process (Measurement Model Assessment and Structural Model Assessment). The study indicated that Business Angel is not significantly related to agricultural entrepreneurial intention nor with the mediating impact of risk perception that could be due to some geographical limitations. But the other antecedents including mediating impact between the relationship of entrepreneurial education, self-efficacy, and social network with agricultural entrepreneurial intention and risk perception.

Keywords: Entrepreneurship, Agricultural Entrepreneurship, Agricultural Entrepreneurial Intention, Entrepreneurial Education
Self-efficacy, Social Network, Business Angel, Risk Perception

Annotosiya: Qishloq xo‘jaligi ishlarini rag'batlantirish Pokistonning uzoq muddatli iqtisodiy o'sishi uchun juda muhimdir. Tadqiqotning asosiy maqsadi tadbirkorlik ta'limi, shaxsiy samaradorlik, ijtimoiy tarmoq, biznes “farishtalari” va qishloq xo'jaligi tadbirkorlik niyatlari o'rtasidagi bog'liqlikni Martin Fishbeinning asosli harakatlar nazariyasi ostida xavfni idrok etishning vositachilik roli bilan, shuningdek, Jeykob Morenoning ijtimoiy tarmog'i nazariyasi asosida o'rganishdir. Tadqiqotchi tasodifiy va qulay tanlov usullaridan foydalangan holda mazkur tadqiqot ishi uchun 400 ta respondentni tanladi. Anketa qishloq xo'jaligi korxonalari tadbirkorlaridan ma'lumotlarni to'plash uchun ishlatilgan. Ma'lumotlar to'plangandan so'ng, Excelda ikkita alohida ma'lumotlar varag'i tayyorlandi, kodlandi va tavsiflovchi statistik tahlil uchun SPSS 23 dasturiy ta'minoti (o'rtacha, chastotalar va standart og'ish) va ikki bosqichli PLS-SEM jarayoni uchun SmartPLS 3.0 yordamida tahlil qilish uchun yuborildi. O'lchov modelini baholash va strukturaviy modelni baholash). Tadqiqot shuni ko'rsatdiki, Business Angel qishloq xo'jaligidagi tadbirkorlik niyati yoki ba'zi geografik cheklovlar tufayli yuzaga kelishi mumkin bo'lgan xavfni idrok etishning vositachilik ta'siri bilan sezilarli darajada bog'liq emas. Ammo boshqa avvalgi omillar, shu jumladan tadbirkorlik ta'limi, shaxsiy samaradorlik va ijtimoiy tarmoqning qishloq xo'jaligi tadbirkorligi niyati va xavfni idrok etish bilan bog'liqligi o'rtasidagi vositachilik ta'siri mavjud.

Kalit so’zlar. Tadbirkorlik, Qishloq xo'jaligi tadbirkorligi, Qishloq xo'jaligidagi tadbirkorlik niyati, Tadbirkorlik ta'limi, Shaxsiy samaradorlik, Ijtimoiy tarmoq,

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Biznes farishta, Xavfni idrok etish

Аннотация: Продвижение сельскохозяйственных работ имеет решающее значение для долгосрочного экономического роста Пакистана. Основная цель исследования – изучить взаимосвязь между предпринимательским образованием, самоэффективностью, социальными сетями, бизнес-ангелами и намерениями сельскохозяйственного предпринимательства с посреднической ролью восприятия риска в соответствии с теорией обоснованных действий Мартина Фишбейна, а также теорией социальных сетей Джейкоба Морено. Исследователь выбрал размер выборки в 400 человек для соответствующей исследовательской работы, используя случайные и удобные методы выборки. Анкета использовалась для сбора данных от предпринимателей агробизнеса. После сбора данных были подготовлены, закодированы и загружены два отдельных листа данных в Excel для анализа описательной статистики (среднее, частоты и стандартное отклонение) и SmartPLS 3.0 для двухэтапного процесса PLS-SEM (оценка модели измерения и оценка структурной модели). Исследование показало, что бизнес-ангел не имеет существенной связи с намерением сельскохозяйственного предпринимательства или с посредническим воздействием восприятия риска, которое может быть связано с некоторыми географическими ограничениями. Однако существуют и другие предпосылки, включая посредническое воздействие между взаимосвязью предпринимательского образования, самоэффективности и социальных сетей с намерением предпринимательства в сельском хозяйстве и восприятием риска.

Ключевые слова: Предпринимательство, Сельскохозяйственное предпринимательство, Сельскохозяйственное предпринимательское намерение, Предпринимательское образование, Самоэффективность, Социальная сеть, Бизнес-ангел, Восприятие риска.

INTRODUCTION

BACKGROUND OF STUDY

It is necessary to step apart from the likely unavoidable consequences of unemployment, as unemployment problems can have negative impacts on society. Entrepreneurship helps to accomplish this aim and therefore regarded as to be one of the powerful effective instruments for wealth creation and country advancement (Aidis, 2005; Audretsch, 2007; Panc, Mihalcea, & Panc, 2012) because of its major macro and micro-level impacts (Henry, Hill, & Leitch, 2003; Pouratashi, 2015). So, it is essential to research aspects that impact entrepreneurial intent, especially specified the socio-economic benefits commonly endorsed to entrepreneurship.

The word 'entrepreneur' is commonly understood to refer to those involved in industrial activity rarely are farmers regarded as entrepreneurs. Few studies have concentrated on rural entrepreneurship in previous years (Fuller-Love, Midmore, Thomas, & Henley, 2006). Agriculture is the backbone of the economies of emerging countries and delivers a key source of income, food, and employment for rural societies. According to FAO (2000), it is reported that the portion of the agricultural residents in the entire population is 67%.

Conventionally, agriculture is understood as a low-tech industry conquered by numerous small family enterprises with minimal complexities, most of which focus on responsibility it improved rather than doing different things. Although humanity has also become skilled in growing yields through the practice of contributions such as pesticides, fertilizers, and organic manure in many regions, including Australia, North America, Europe, and recently, China, Brazil, and India. Yet, agriculture carries on to enlarge into negligible and vulnerable lands in numerous poorer states with short productivity proportions and growing populations. The World Bank declared that one of the

most important tools for ending extreme poverty, boosting mutual prosperity, and nourishing a predictable 9.7 billion people by 2050, is agricultural production. Enlargement in the agriculture segment is two to four times more successful compared to other sectors in increasing incomes among the poorest.

According to the light of the above facts, if we compare the agricultural condition of Pakistan regarding Pakistan Economic Survey 2017-18; the agricultural sector is adding the value of 21% of GDP, agricultural products account for 17.5% of all exports, Employment in agriculture 45% of total employment, while the overall agriculture growth is 3.18% in Pakistan as reported in 2018 which is not even a satisfactory growth if we compare it with value addition in percent of GDP as well as with employment rate. Around 60 percent of about 5000 industrial establishments in Pakistan are agri-based. So, the growth can be increased which will positively affect the economy, agriculture division, and its related areas.

Fresh research shows that agricultural entrepreneurship is not just aspiring thinking or new publicity: it has a significant effect on the development and survival of companies (Lans, Verstegen, & Mulder, 2011; Verhees, Kuipers, & Klopcic, 2011). Anyhow, some of the researchers revealed that in Pakistan there is a lack of new business in agriculture and value addition in agriculture products. There is a need to focus on agriculture entrepreneurship (Haque, 2007).

This research will contribute to current efforts to assimilate the arenas of agricultural entrepreneurial intention in Pakistan, and may be important for developing agricultural entrepreneurial intention through factors such as entrepreneurial education, self-efficacy, social networks, business angles, and the mediating effect of risk perception. The core purpose of this research is to identify the relationships of these variables and their effects on agricultural entrepreneurial intention.

LITERATURE REVIEW

Entrepreneurship is a mechanism containing distinct phases. It has an impact on various social classes at the same time. Individual entrepreneurial choices are strongly affected by both internal and external factors (Cuervo, Ribeiro, & Roig, 2007). In this era entrepreneurship played a considerable role in the economic growth of our country, this provides many employment opportunities in the employment sector. Finding a profitable business model that can be researched and transformed into a particular model, service, or approach is often the first step in the entrepreneurial process (Shane, 2000).

To study this phenomenon, intellectuals of entrepreneurship examine various stages and phases of the entrepreneurial activities, combining current concepts and approaches (Welter, 2011; Zahra, Wright, & Abdelgawad, 2014). Entrepreneurship scientists have recently paid a lot of attention to approaches to entrepreneurship study based on cognitive and social capital in order to study factors that affect entrepreneurship growth. We are using cognitive and social capital variables in this research to forecast early-stage entrepreneurial behaviour.

Agriculture entrepreneurship isn't just wishful thinking or a modern fad, according to new research: It has a substantial impact on the growth and survival of businesses (Lans et al., 2011; Verhees et al., 2011). Historically, the agricultural work environment has not traditionally contributed to entrepreneurial actions. Over the last 50 years, agriculture has become a highly specialized sector focused on production and productivity in many western countries (Van der Ploeg, Long, & Banks, 2002). As a development factor, agricultural activity relies on land and therefore this activity has a greater effect on the environment than other sectors do (Britz, van Ittersum, Oude Lansink, & Heckelei, 2012).

Whether agricultural entrepreneurship differs from entrepreneurship in non-agricultural firms is a classic question presented in debates regarding agricultural entrepreneurial intention. According to the type of research question and research paradigm used the answer is yes and no (Pindado & Sánchez, 2017). It seems like some aspects of entrepreneurship are quite common, regardless of context (Rauch, Wiklund, Lumpkin, & Frese, 2009) e.g., Other elements of entrepreneurship are more focused on the essence and background of entrepreneurship, such as proactivity, risk-taking, and entrepreneurial self-efficacy (Lans, Biemans, Verstegen, & Mulder, 2008) e.g., entrepreneurial learning.

According to Ajzen and Fishbein (2005) when intentions are strong then the interest to perform a behaviour is also strong, it is well done before behaviour perform. If a person has the intention to perform a behaviour this is the primary source of future behaviour prediction. When behaviours are under the person's control then the intention anticipates actual behaviour with significant accuracy (Ajzen & Fishbein, 2005). This tells the basic principle is that the greater the intention to adopt a given act, the greater the likelihood that such actions will be enforced (Ajzen, 1991; Arrighetti, Caricati, Landini, & Monacelli, 2016). McGee, Peterson, Mueller, and Sequeira (2009) are deliberated to be a forecaster to entrepreneurial intentions (C. C. Chen, Greene, & Crick, 1998; Zhao, Seibert, & Hills, 2005). Entrepreneurial intention research shows several factors that contribute to the intention of the individual to start a company, including the personality of the individual and the environmental background (Lüthje & Franke, 2003; Nabi & Liñán, 2013a). The techniques used to research agriculture will benefit from general entrepreneurship as well (Borch & Forsman, 2001; Carter, 1998; McNally, 2001).

The only thing which can help to overcome crises facing these days and increase productivity fast is agriculture. If the government of Pakistan develops strategies that empower the agricultural entrepreneurial intention within the country, the future can be secured by any kind of famine or other related crises.

This research as noted earlier incorporates the influence of factors (external and internal) and makes a significant contribution to agricultural entrepreneurial intention. Thus, the following are the main factors affecting the agricultural entrepreneurial intention in Pakistan.

ENTREPRENEURIAL EDUCATION AND AGRICULTURAL ENTREPRENEURIAL INTENTION

Numerous researches have been carried out to examine various relationships among entrepreneurship, education, as well as entrepreneurial performance (Henry et al., 2003; Solymossy, 1998). Entrepreneurship success is related to entrepreneurial intent, down-to-earth functioning, and the accumulation of unique business processes, but it is also linked to qualification experience. The Iranian Statistical Centre (2011) estimates that each year, 270,000 university graduates enter the labour market, but this figure understates market potential (Soltani, Khosravi, & Salehiniya, 2015). As a consequence, for many non-graduates, business is not an option arising from the "pull" incentive, but a "push" need that seeks to reduce the educational gap by replacing it with talent and/or hard work (Tierney & Slack, 2005). In the 1970s, the United Kingdom and France initiated several entrepreneurial education programs, according to Guzmán and Liñán (2005). Entrepreneurship education focuses on preparing people, particularly youth, to be proactive, to take more risks, to manage a business, and improve from the consequences through immersing them in real-life learning opportunities.

H1: There is a relationship between risk perception and agricultural entrepreneurial intention.

H2: There is a relationship between entrepreneurial education and agricultural entrepreneurial intention.

H3: There is a relationship between entrepreneurial education and risk perception.

In comparison to any other nation, Pakistan has the lowest rate of promoting entrepreneurship at universities and business schools. This factor affects the growth rate and causes many deficiencies in different sectors. The main affected sector is agriculture, which mainly participated in growth, GDP, and other related economic factors. According to ODEP (2008), entrepreneurial education can help students change their minds about working for themselves and equip them with either the skills they'll need to run a company (Karimi, Chizari, Biemans, & Mulder, 2010).

SELF-EFFICACY AND AGRICULTURAL ENTREPRENEURIAL INTENTION

Self-efficacy is a psychological state generally defined in the performance of a particular task as having self-confidence. As a central factor in understanding why certain people are inspired to become entrepreneurs while others are not, self-efficacy has gained consideration in recent years. More precisely, the role self-efficacy plays in encouraging entrepreneurial behaviour has been explored by several researchers. Self-efficacy is described as "belief in one's ability to mobilize the requisite motivation, cognitive resources, and action courses to fulfil certain situational requirements" (Wood & Bandura, 1989).

Several researchers have suggested that the most significant construct that explains the growth of entrepreneurial ambitions, which in turn affects entrepreneurial behaviour, is self-efficacy (Ajzen, 1987; Boyd & Vozikis, 1994; C. C. Chen et al., 1998; Krueger Jr, Reilly, & Carsrud, 2000; Schlaegel & Koenig, 2014). It has been observed that individuals with higher levels of self-efficacy perform more demanding tasks, maintain efforts to achieve certain tasks, and persist when they face difficulties (Bandura, 1997; Stajkovic & Luthans, 1998).

Recently Arafat, Saleem, Dwivedi, and Khan (2020) also concluded that self-efficacy affects agricultural entrepreneurship. Personality characteristics, self-efficacy, and perceived opportunities have been used in numerous studies to predict entrepreneurial intentions (de Janasz, de Pillis, & Reardon, 2007; Ismail et al., 2009; Kristiansen & Indarti, 2004; Lüthje & Franke, 2003; Sata, 2013; Segal, Borgia, & Schoenfeld, 2005). Therefore, we hypothesize:

H4: There is a relationship between self-efficacy and agricultural entrepreneurial intention.

H5: There is a relationship between self-efficacy and risk perception.

SOCIAL NETWORK AND AGRICULTURAL ENTREPRENEURIAL INTENTION

A set of agents is generally known as a social network that has a particular linkage that connects certain agents (Easley & Kleinberg, 2010, 2012; Glückler, 2007; Wasserman & Faust, 2009). Social networks act to channel knowledge and resources to specific structural sites to help build preferences and mutual individualities and to encourage communal norms and values. In general, entrepreneurial leaders are simultaneously involved in the networking process of the social network in legal knowledge disclosure and interaction. Entrepreneurs are often faced with two viable social network strategies, especially when dealing with potential investors: to disclose as much entrepreneurship-related qualification data as possible to investors in order to build their reputation in the presence of potential investors, or to provide project updates and answer entrepreneurialism questions (Aral & Walker, 2014).

The function of social networks is particularly important in developing countries like Pakistan, where access to institutions is restricted (Abid, Schilling, Scheffran, & Zulfiqar, 2016). Small

farmers, in particular, are frequently denied access to institutional resources that are biased against landlords or prominent farmers (Abid, Scheffran, Schneider, & Ashfaq, 2015; Saboor, Hussain, & Munir, 2009). Farmers' understanding and adoption of new agricultural technologies growth is the result of social networks promoting knowledge flows, creating intellectual networks, and encouraging literacy (Thuo et al., 2014; Weyori, Amare, Garming, & Waibel, 2018). Although other factors and networks play an essential part in transmitting the information to a wider network through secondary pathways.

In agriculture, in the entrepreneurial process, many farmers face more severe resource constraints; therefore, breaking free of resource constraints such as funding through their social network tools becomes especially important (Xiong, Wang, & Zhu, 2016). Social networks are primarily used in agricultural economics research on innovation as well as adoption. A few other studies focus on networks being adoption catalysts without addressing technology (Beaman, BenYishay, Magruder, & Mobarak, 2018; Diederen, Van Meijl, Wolters, & Bijak, 2003; Kondylis, Mueller, & Zhu, 2014; Läpple, Holloway, Lacombe, & O'Donoghue, 2017; Läpple, Renwick, Cullinan, & Thorne, 2016).

This is because social networks are the main factor by which people are usually motivated to adopt or checkout something newly innovated rather than sticking to old traditional things. Social networks are positively linked to entrepreneurial intentions (OJEWUMI, 2019; Quan, 2012; Sesen, 2013; Usman, Masood, & Khan, 2021; Wu & Li, 2017). Therefore, we hypothesize:

H6: There is a relationship between social network and agricultural entrepreneurial intention.

H7: There is a relationship between social network and risk perception.

BUSINESS ANGEL AND AGRICULTURAL ENTREPRENEURIAL INTENTION

Business angels are valuable sources of new investment capital. Yet it is difficult to gain business angel funding (Frias, Popovich, Duhan, & Lusch, 2020). Many countries' business economies depend heavily on business angels (Mason & Harrison, 1997; Morrissette, 2007; Wetzel Jr, 1987). After support from friends and family, angel investment is located as the second utmost common source of capital for newly founded businesses (Avdeitchikova, Landström, & Månsson 1, 2008). The majority of angel investors appear to be investment banks who provide financing as well as crucial initial managerial and financial support to new companies in their preliminary phase (Landström, 1993; Maxwell, Jeffrey, & Lévesque, 2011; Shane, 2009). Business angels invested nearly eight times as much as venture capitalists between 2001 and 2013 (Carpentier & Suret, 2015).

The Ministry of Agriculture, in particular, began concluding agreements with companies to boost competitiveness in 2019. They aim to increase the production of products that are in demand abroad and enable agricultural producers to obtain soft loans for short-term and investment purposes in this respect (VASILCHENKO & DERUNOVA, 2020). The recent emergence of advanced angel investment networks has an effect about how business angels can bring on, pay more attention to, and analyse information relevant to heavy investment that is beyond their comfort zone. A business angel is the most important factor in promoting entrepreneurship. Because many of the people may have new ideas to bring a new thing or to start the new ventures, but the most banishing thing for this to implement is an investment. Business angles can mainly promote new ideas to be implemented and to increase the entrepreneurship rate in the country.

Recently Arafat et al. (2020) studied the relationship of business angel and agricultural entrepreneurship, and the result showed that agricultural entrepreneurship is significantly related to business angel. Another study by Collewaert (2012) identified the relationship between business angel and entrepreneurial intention. Therefore, we hypothesize:

H8: ***There is a relationship between business angel and agricultural entrepreneurial intention.***

H9: ***There is a relationship between business angel and risk perception.***

RISK PERCEPTION AS MEDIATOR

Entrepreneurs are risk-takers, people seeking to impulse the limitations of conventional wisdom and practices. "Risk-taking is the willingness to commit resources to plans with a reasonable chance of costly failures" (Verhees et al., 2011). The degree to which farmers consider risk varies. Some farmers are more willing to take chances than others. The farmer's financial capacity to accept a minor gain or loss is also related to risk attitudes (Mupfasoni, Kessler, & Lans, 2018). The perception of risk defines the subjective decisions of individuals regarding risky behaviours and technologies (Slovic, 1987). Conclusions from different reports suggest about reducing the perception of danger or fear of failure, we can raise the likelihood of opening a company for example, (Arafat & Saleem, 2017; Arenius & Minniti, 2005; Koellinger, Minniti, & Schade, 2013; Langowitz & Minniti, 2007; Minniti & Nardone, 2007; Morales-Gualdrón & Roig, 2005; Noguera, Alvarez, & Urbano, 2013; Urbano & Alvarez, 2014; Wagner, 2007). Risk means a subjective cognitive structure that covers social meanings and personal inferences of dangers that can threaten people and value things (Klinke & Renn, 2002).

In principle, risk perception is located as a good optimistic indicator of sustainable agricultural practices, Dessart, Barreiro-Hurlé, and van Bavel (2019) have pointed out. Besides, the functions of risk perception and risk attitude have been considered independent and direct in previous studies, although few studies have explored the mediation and moderation effects of risk perception in the association between risk attitude and action of the application of pesticides. Indeed, there is a causal ordering, as shown by Dessart et al. (2019), from risk perception to risk attitude to human actions.

Arafat et al. (2020) also studied the direct association between risk perception and agricultural entrepreneurship. Agricultural entrepreneurial intention is mainly influenced by Pouratashi (2015). Some other researchers (Adu, Boakye, Suleman, & Bingab, 2020; Nabi & Liñán, 2013b; Remeikiene, Startiene, & Dumciuviene, 2013) concluded that entrepreneurial education has both direct and indirect impacts on entrepreneurial intention. Acuña-Rivera, Brown, and Uzzell (2014) tested a new conceptual model in his research, which indicates that risk perception is a significant mediator. As a result, the following hypothesis is proposed:

H10: ***Risk perception has a mediating relationship between entrepreneurial education and agricultural entrepreneurial intention.***

In many health promotion behaviour theories, risk perception and self-efficacy are two of the most significant factors (Bandura, Reese, & Adams, 1982; Imai et al., 2020). Stroe, Parida, and Wincent (2018) demonstrated that known concepts must always be hypothesised and studied in novel ways in order to have a better understanding of the individual psychological aspects that influence entrepreneurial decision-making. According to Sitkin and Weingart (1995) risk perception mediate the impact of problem framing and result history on risky decision-making. As a result, the following hypothesis is proposed:

H11: ***Risk perception has a mediating relationship between self-efficacy and agricultural entrepreneurial intention.***

Social support (emotional, material, and informational) is important in determining how people perceive past threats and current concerns (Jones et al., 2013). Despite the fact that risk perception network studies have been overlooked in both businesses and communities, the confirmation that these networks actually predict risk perception opens the door to further research into other social network-risk linkages, including risk behaviours (Scherer & Cho, 2003). Y.-H. Chen, Chien, Wu,

Tsai, and Networking (2010) mentioned that decisions are influenced by the attitude to risk as well as the investor's perception of investment risks and are both significant mediators in investment decisions. As a result, the following hypothesis is proposed:

H12: Risk perception has a mediating relationship between social network and agricultural entrepreneurial intention.

Both financial and non-financial business performance was unaffected by risk-taking propensity (Cho & Lee, 2018). Business Angels do not perceive these traits as compensating if the expected risk is too great or the expected return is too low, according to Jeffrey, Lévesque, and Maxwell (2016) findings. In other words, if the risk is too high, the return cannot be high enough to compensate; conversely, if the return is too low, the risk cannot be small enough to compensate for the low return (Jeffrey et al., 2016). Riaz, Hunjra, and Sciences (2015) in her study concluded that risk perception has the mediating role in investment decision making. As a result, the following hypothesis is proposed:

H13: Risk perception has a mediating relationship between business angel and agricultural entrepreneurial intention.

RESEARCH FRAMEWORK

The influence between social and cognitive variables on the agricultural entrepreneurial intention at the start-up level is investigated in this study. Entrepreneurial education, self-efficacy, social network and business angel are variables including the mediating impact of risk perception are studied in the current research.

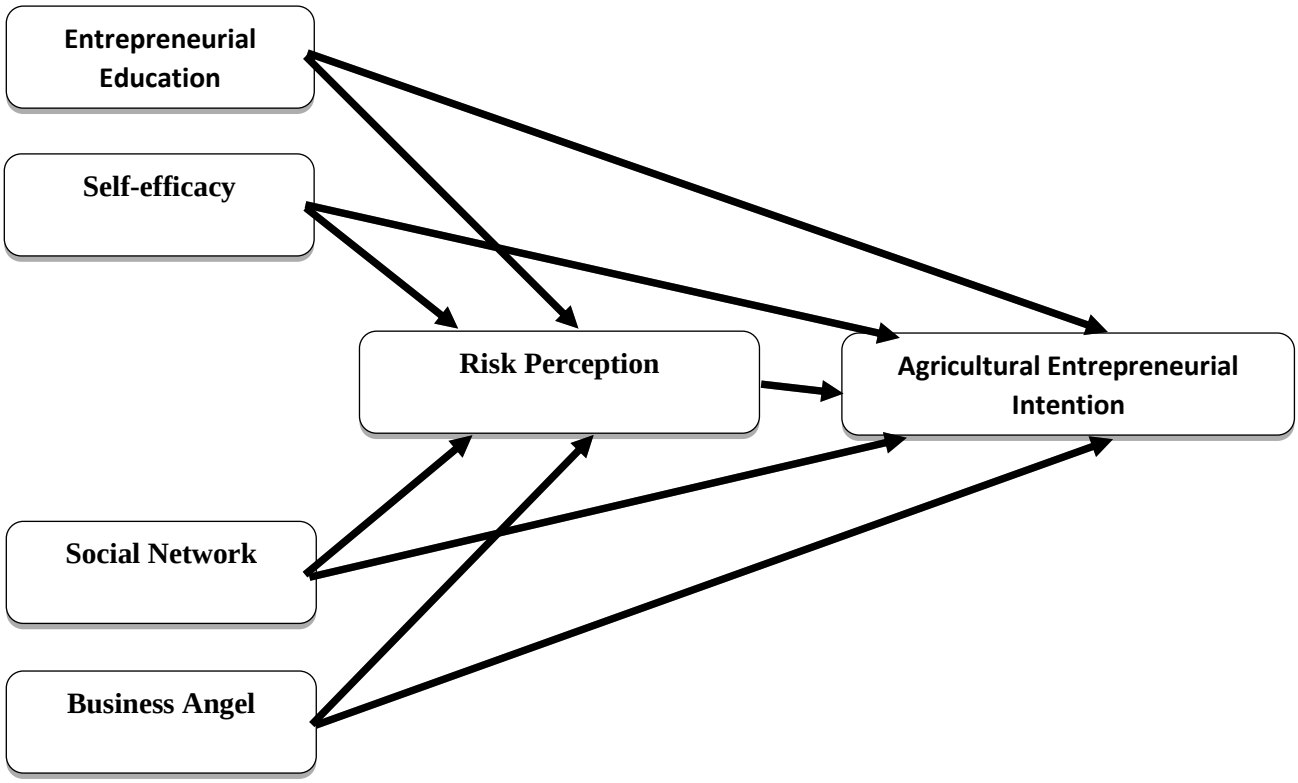

Figure 0-1 Research Framework

REVIEW OF THE RELEVANT THEORETICAL MODELS

Individual entrepreneurial adoptions actually transpire influenced by equally inside as well as outside environments (Cuervo et al., 2007). To answer "why people start up any business" the theory was presented by Ajzen (1991). This theory extends the already formed theory "theory of reasoned action" which was also presented by A. I. Fishbein (1980). Their theory will be appropriate for the modern-day study as it explains "why people perform certain actions". All these factors/concepts were fully aligned to the current study and will be helpful in understanding the agricultural entrepreneurial intention of agri-entrepreneurs in Pakistan through the influencing antecedent's entrepreneurial education, self-efficacy, social network and business angel including mediating impact of risk perception.

ENTREPRENEURIAL INTENTION AND THE THEORY OF REASONED ACTION (TRA)

Intentions were thought to be the best predictor of behaviour at the time (M. Fishbein & Ajzen, 1977). A. I. Fishbein (1980) proposed that the theory of reasoned action (TRA) provides a broad theoretical framework for actions that are motivated by attitudes as well as social values. Theory of reasoned action has been commonly used in a variety of contexts to describe individual actions (see Powell and Goulet (1996); (Trafimow & Miller, 1996)) and is also well-known to a large number of researchers of entrepreneurial intention through its adoption. However, recent publications on theory of reasoned action indicates that it can also help to understand career and vocational choices (Arnold et al., 2006; Van Hooft, Born, Taris, & Van der Flier, 2006). Behavioural attitudes were defined as a set of readily accessible or salient beliefs about the potential consequences of performing the target behaviour, while subjective norms were defined as the perceived social pressure to perform or not perform the target behaviour, and behavioural intentions were defined as the perceived likelihood of performing the target behaviour.

ENTREPRENEURIAL INTENTION AND SOCIAL NETWORK THEORY

Since British anthropologist Alfred Radcliffe-Brown used the term "social network" for the first time in his book on Social Structure in 1940, social network theory has been widely debated (Yao, 2011; Yu, 2010). Social network theory had already previously been practised as both a resource basis for entrepreneurship and an underlying driver in the evolution of entrepreneur behaviour. The study of entrepreneurship has grown alongside it. The primary premise of social network theory is that because of their relationships, people in social contexts think and act similarly (Bøllingtoft, 2012). When compared to other theories, social network and social capital theory emphasise the extensive and abundant resources that entrepreneurs have as the most important factor to consider when a new enterprise takes off (Yao, 2011).

RESEARCH METHODOLOGY

Research methodology can be defined as a gambit that is followed by rules & regulations in order to obtain the desired information. It uses some procedures and methods during the analysis of information from responders (Zikmund, Babin, Carr, & Griffin, 2003).

RESEARCH DESIGN

A research design is said to be a scientific method that mostly relies on the procedures of collecting and interpreting the needed information. The researcher workouts for the collection of primary sources of data to get required information based on quantitative approaches. Also, a research design refers to the overall plan outlining the strategies and methods used to collect and analyse

data (Zikmund & Carr, 2000). Three forms of study are provided by business studies: exploratory, descriptive, and explanatory (Sekaran, 2003; Zikmund & Carr, 2000). Finally, explanatory architecture is used to provide a precise awareness of the relationships of the variables concerning their existence (Sekaran, 2003; Zikmund & Carr, 2000).

The researcher used quantitative causal research in the current study. Such kind of research helps us to understand or making a connection or relation between dependent and independent variables (Ranjit, 2011). The researcher chose a non-probability sampling technique because it offers every member of a group a chance to be chosen as a sample unknown. In a non-probability sampling technique, the researcher used a convenience sampling method for data collection, because it is more convenient, time-saving, and provides easy access to respondents.

In a set of inferential figures, Comrey and Lee (1992) provided samples. A poorer sample will be found with fewer than 50 participants; a sample of 100 will be weak; 200 will be adequate; a sample of 300 will be considered good; 500 will be very good, while 1000 will be excellent. So, keeping in view the researcher selected a sample size of 400 for appropriate research work.

the unit of analysis for the current study is any business unit of different industries related to agriculture such as sugar mills, oil and ghee mills, flour mills, cotton factories, tea making industries, etc. working within Southern Punjab, Pakistan. The sample size was taken from the different field formation of the agricultural entrepreneurship, businesses associated with agricultural entrepreneurship and students currently pursuing their education in entrepreneurship from Southern Punjab, Pakistan region where entrepreneurs are producing a different kind of agriproducts or bringing innovations in the previously developed agriproducts.

MEASUREMENT AND INSTRUMENTATION

For this research, the researcher used a questionnaire for data collection through Google Form, Email, WhatsApp and self-administrated. It is the primary data of our research work. The questionnaire is adopted from previous researchers (Adnan, 2019; Harrison & Mason, 2005; Panda, 2002; Ramadani, 2009; J.-H. Wang, Chang, Yao, & Liang, 2016; Y. L. Wang, Ellinger, & Wu, 2013) or modified it so that it can be fit to such research. The questionnaire based on the close ended five-point Likert scale ranging from 1 depicting strongly agree to 5 depicting strongly disagree is used.

SCALE OF MEASUREMENT

According to Sekaran (2003), the appropriate method for better understanding the relationships among different variables is a measurable scale.

AGRICULTURAL ENTREPRENEURIAL INTENTION SCALE

Table 3-1 Items of the Agricultural Entrepreneurial Intention scale

	Item
AEI1	I will do anything to become an entrepreneur
AEI2	My professional goal is to become an entrepreneur
AEI3	I will make every effort to establish and operate my own business
AEI4	I am seriously considering starting a business
AEI5	I am determined to become a professional business manager
AEI6	I am determined to develop my business into a high-growth enterprise
AEI7	I plan to start my own business within 2 years after graduation
AEI8	I plan to start my own business within 5 years after graduation

AEI9	I am going to inherit my family's business in the future

Source: J.-H. Wang et al. (2016)

ENTREPRENEURIAL EDUCATION SCALE

Table 3-2 Items of the Entrepreneurial Education scale

	Item
EE1	I am prepared to do anything to be an entrepreneur
EE2	I want to implement the skills I learnt
EE3	I have thought seriously to start my own business after completing my study
EE4	I want to implement the theoretical knowledge in business practice

Source: Adnan (2019)

SELF-EFFICACY SCALE

Table 3-3 Items of the Self-efficacy scale

	Item
SE1	I can achieve most goals that I set for myself
SE2	When working on difficult tasks, I am certain that I will complete them
SE3	I can achieve outcomes that are important to me
SE4	I believe that I can succeed in most endeavours that I focus on
SE5	I can successfully overcome many challenges
SE6	I am confident that I can perform effectively in various tasks
SE7	Compared with other people, I can perform effectively in most tasks
SE8	I can perform effectively in a difficult situation

Source: J.-H. Wang et al. (2016)

SOCIAL NETWORK SCALE

Table 3-4 Items of the Social Network scale

	Item
SN1	My contacts or discussions with potential or existing customers help me to recognize opportunities
SN2	My contacts or discussions with existing suppliers, distributors, or manufacturers help me to recognize opportunities
SN3	My social and professional contacts help me to recognize opportunities

Source: Y. L. Wang et al. (2013)

BUSINESS ANGEL SCALE

Table 3-5 Items of the Business Angel scale

	Item

BA1	The business angels are supporting the new generation of entrepreneurs
BA2	The business angels feel personal satisfaction from involvement in entrepreneurial business
BA3	Growth potential is the major interest of business angels
BA4	The business angels helping their friends to set up their businesses
BA5	The business angels are participating in generating revenues – now or in the future
BA6	The business angels supporting the production of goods and services which are useful for society
BA7	The business angels are participating for fun
BA8	The business angel finances a venture for a positive impression, reputation in the community
BA9	The business angels have other non-financial motives
BA10	The business angels participate to increase their tax incentives

Source: Harrison and Mason (2005); Ramadani (2009)

RISK PERCEPTION SCALE

Table 3-6 Items of the Risk Perception scale

	Item
RP1	The chances of entry of large players are high in the market
RP2	There is a technological obsolesce in the market
RP3	There is non-cooperation of financial institutions in the market
RP4	There is a poor-quality perception of the customer in the market
RP5	Governments frequent policy change will increase the work intentions
RP6	There is the availability of a low-cost substitute in the market
RP7	There are export opportunities in the market

Source: Panda (2002)

DATA PROCESSING AND DATA ANALYSIS

The gather data from the respondent was tested in the first step for completeness and comprehensibility. After this codding was given to data in spreadsheet (Excel Sheet) and analysed using the SPSS 23 and SmartPLS 3.0. Descriptive statistics analysis (mean, frequencies and standard deviation) is measured by SPSS 23 while for measuring SEM technique SmartPLS 3.0 is used in this research.

Two-step approaches (Measurement Model Assessment; Structural Model Assessment) for reporting PLS-SEM have been taken for analysis purposes as recommended by (Henseler, Ringle, & Sinkovics, 2009). Such a method remains an efficient as well as the scalable method used in the creation and forecasting of statistical models (Hair, Ringle, & Sarstedt, 2012)

	Saturated Model	Estimated Model
SRMR	0.076	0.076

RESULTS AND ANALYSIS

RESPONSE RATE

The researcher spread the 400 questionnaires to the businessmen and students of entrepreneurship that are working in the agriculture sector in Southern Punjab, Pakistan by using the convenience sampling technique (a type of non-probability sampling technique).

Table 4-1 Response Rate

Questionnaire Delivered	**Questionnaire Received**	**Questionnaire received in complete form**	**Response Rate**
400	350	336	84%

MODEL FITNESS

Table 4-2 Model Fitness

FACTOR LOADING

Observation of the loadings of all constructs of the research for the purpose to investigate the issues that toil as a preliminary requirement for the "measurement model". According to Hair et al. (2012) loading of all the construct items value is >0.5 then the convergent validity is attained. As concerning present research, loadings of all items are above the threshold of 0.5. Moreover, as clarified in the Table 4-2 confirmed Cronbach's alpha, Composite Reliability and AVE values are adequate.

Table 4-3 Factor Loading

Construct	**Items/indicators**	**Factor Loading**	**Cronbach's Alpha**	**Composite Reliability**	**Average Variance Extracted (AVE)**
Agricultural Entrepreneurial Intention (AEI)	1. Item 1	0.756	**0.917**	**0.931**	**0.6**
	2. Item 2	0.724			
	3. Item 3				
	4. Item 4	0.78			
	5. Item 5	0.769			
	6. Item 6				
	7. Item 7	0.803			

	8. Item 8 9. Item 9	0.763 0.801 0.784 0.79			
Entrepreneurial Education (EE)	1. Item 1 2. Item 2 3. Item 3 4. Item 4	0.869 0.823 0.844 0.785	**0.85**	**0.899**	**0.69**
Self-efficacy (SE)	1. Item 1 2. Item 2 3. Item 3 4. Item 4 5. Item 5 6. Item 6 7. Item 7 8. Item 8	0.796 0.811 0.831 0.851 0.807 0.852 0.837 0.818	**0.933**	**0.945**	**0.681**
Social Network (SN)	1. Item 1 2. Item 2 3. Item 3	0.881 0.848 0.87	**0.834**	**0.9**	**0.75**
Business Angel (BA)	1. Item 1 2. Item 2 3. Item 3 4. Item 4 5. Item 5 6. Item 6 7. Item 7 8. Item 8 9. Item 9 10. Item 10	0.817 0.779 0.81 0.825 0.844 0.808 0.838 0.835 0.823 0.802	**0.945**	**0.953**	**0.669**
Risk Perception (RP)	1. Item 1 2. Item 2 3. Item 3 4. Item 4 5. Item 5	0.83 0.798 0.813	**0.889**	**0.914**	**0.605**

6. Item 6	0.806
7. Item 7	0.832
	0.676
	0.672

FORNELL-LARCKER CRITERION

To evaluate discriminant validity, there is a most popular approach named as Fornell-Larcker criterion (Hair, Ringle, & Sarstedt, 2013). Discriminant validity has been tested through the Fornell-Larcker criterion for each variable and construct, the detail of which is as follows.

Table 4-4 Fornell-Larcker Criterion

Constructs	AEI	BA	EE	RP	SE	SN
AEI	0.775					
BA	0.826	0.818				
EE	0.869	0.847	0.831			
RP	0.869	0.894	0.834	0.778		
SE	0.812	0.994	0.829	0.889	0.826	
SN	0.763	0.88	0.8	0.856	0.854	0.866

HETEROTRAIT-MONOTRAIT RATIO HTMT

Table 4-5 HTMT

	AEI	BA	EE	RP	SE	SN
AEI						
BA	0.879					
EE	0.874	0.845				
RP	0.763	0.872	0.758			
SE	0.870	0.758	0.830	0.873		
SN	0.863	0.792	0.848	0.889	0.867	

QUALITY CRITERIA

Following are the ways to analyse quality criteria.

R-SQUARE

Table 4-6 R-square

	R Square	R Square Adjusted
AEI	0.829	0.826

RP	0.841	0.839

F-SQUARE

Table 4-7 F-square

	AEI	BA	EE	RP	SE	SN
AEI						
BA	0.02			0.009		
EE	0.298			0.102		
RP	0.259					
SE	0.017			0.044		
SN	0.026			0.122		

Q-SQUARE

Table 4-8 Q-square

	SSO	SSE	Q^2 (=1-SSE/SSO)
AEI	3024	1557.777	0.485
BA	3360	3360	
EE	1344	1344	
RP	2352	1164.903	0.505
SE	2688	2688	
SN	1008	1008	

HYPOTHESIS TESTING

Test of the direct and mediating relationship of hypothesis are as follows:

DIRECT EFFECTS AND HYPOTHESIS TESTING

Table 4-9 Direct effects

Hypothesis	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
RP -> AEI	0.528	0.529	0.088	5.998	0
EE -> AEI	0.463	0.464	0.074	6.244	0
EE -> RP	0.248	0.245	0.054	4.557	0
SE -> AEI	0.53	0.522	0.249	2.123	0.017
SE -> RP	0.811	0.799	0.258	3.142	0.001
SN -> AEI	0.162	0.158	0.074	2.193	0.014
SN -> RP	0.32	0.319	0.07	4.604	0

BA -> AEI	0.632	0.616	0.255	2.475	0.007
BA -> RP	0.404	0.388	0.283	1.428	0.077

MEDIATION

Table 4-10 Mediation

Hypothesis	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
EE -> RP -> AEI	0.131	0.13	0.036	3.589	0
SE -> RP -> AEI	0.428	0.423	0.156	2.744	0.003
SN -> RP -> AEI	0.169	0.168	0.045	3.796	0
BA -> RP -> AEI	0.213	0.205	0.155	1.374	0.085

DISCUSSION AND CONCLUSION

FINDINGS OF STUDY

In this current study hypotheses are accepted and rejected keeping in view the t-values and the p-values as a level of significance. The hypothesis having a t-value that is above the 1.64 that were supported and accepted and the rejected hypothesis are those having a t-value less than 1.64. From SmartPLS 3.0 represents all hypotheses of the initial phase of the study, where H1, H2, H3, H4, H5, H6, H7, H8, H10, H11, and H12 are supported and H9 and H13 are not supported.

The value of R^2 shows the strength of the relationship or we may say that regression of the relation. It also shows how much change is being done by other variables in a relation. In this study 48.4% change in the dependent variable by other variables. Furthermore, in accordance with Fornell and Larcker (1981) and Hair Jr, Sarstedt, Hopkins, and Kuppelwieser (2014) the Average Variance Extracted should be at least 0.50 and the composite reliability level must be at 0.70 and above. Moreover, all the variables of this study are greater than 0.50. AVE greater than 0.5 shows the high reliability of the measurement model is chosen for this study.

The purpose of analysing the discriminant validity is to determine the model “external consistency”; which is to be done on behalf of linkage amongst the latent variables, the value of the constructs is compared with the AVE’s square root. Lastly, as enlightened in table 21 all the associations amongst the construct are lesser than the square of the (AVEs) as which are bolded crosswise. Only those which are rejected are fit into the model by the support of the literature, in accordance with that due to cultural impact and trend of not supporting research has been dissatisfied with the collected data.

IMPLICATION OF THE STUDY

The findings of this research have brought a detailed view of those aspects which influences the agricultural entrepreneurial intention of entrepreneurs. It is the need of time to understand how these intentions can helpful for the betterment of the national economy. Here are some future implications of this study:

MANAGERIAL IMPLICATION

The findings of this research have shown many significant factors affecting the agricultural entrepreneurial intention of entrepreneurs in Southern Punjab, Pakistan. The demographic variables including gender, age, education, business background, financial benefits, institutional training, technical skills, experience, business start-up, number of employees, estimated annual turnover, starting/running source and participation in exhibitions/events have a relationship with agricultural entrepreneurial intention. In the economy of any country, entrepreneurship is regarding chief macroeconomic variable as it provided the basis for further investment and national growth. In Pakistan, 67% population used to live in rural areas and their main source of income is agricultural industries which may contribute a lot towards national savings. The government can only enjoy it if it understands the pattern and nature of agricultural entrepreneurs. Thus, the research believes that the findings of this research can be helpful for various sectors including formulation of national policies for agriculture etc.

FINANCIAL INSTITUTION

The finding of the study pointed out the various agricultural entrepreneurial intention of entrepreneurs in the area of Southern Punjab, Pakistan. These agricultural entrepreneurial intentions can only be helpful for the economy of Pakistan if there are harnessed proper. The banking sector can offer various customized loans to enhance agricultural sector and products. These products will boost entrepreneurship in Pakistan to increase the GDP of the country.

EDUCATIONAL POLICIES

The finding of the research found a positive and significant relationship between entrepreneurial education and agricultural entrepreneurial intention. The result shows that the entrepreneurs with higher education participating more in entrepreneurship rather than those who have less or no entrepreneurial education. It is a need time the government should immediately understand the dire need for entrepreneurial education and take immediate steps in promoting entrepreneurial education in all areas of Pakistan. It requires heavy investment and proper monitoring for getting the desired result. Besides this, the private sector and NGOs should take part to promote entrepreneurial education and essential skill for managing entrepreneurial affairs. The focus of the study should be more than to educate the people. Adult entrepreneurial educational programs should be introduced for improving entrepreneurial knowledge and better management.

SOCIALIZE PROGRAMS

A sequenced and periodically socialised program like seminars, public walks, awareness schemes should be organized to promote agricultural entrepreneurial intention amongst the people. This can also be achieved through social agents. Special training may be introduced to vitalize the inner skill of leadership and promote agricultural entrepreneurship.

THEORETICAL IMPLICATION

The finding of the study found alight to the theory of reasoned action and social network theory. The proposed research framework found true that agricultural entrepreneurial intention is affected by factors like entrepreneurial education, self-efficacy, social network and business angel as well as by the mediating variable risk perception. A thorough understanding of the agricultural entrepreneurial intention of entrepreneurs requires figuring out their attitude and belief towards entrepreneurship. Thus, the theory of reasoned action and social network theory are effective theories to understand the agricultural entrepreneurial intention of entrepreneurs.

CONCLUSION

The aim of this study is to determine the evaluation of agricultural entrepreneurial intentions and their relevancy with entrepreneurial education, self-efficacy, social network and business angel, with mediating effect of risk perception. The research here determined results; Results obtain from primary data support and the variable business angel do not support the study hypothesis; this research contributes theoretically and practically.

LIMITATIONS OF THE STUDY

While completing the study several limitations are observed, some of them are elaborated here which can be helpful for the future researcher.

SAMPLE SIZE

A sample of 400 is taken to understand the agricultural entrepreneurial intention of entrepreneurs in Southern Punjab, Pakistan; where the aggregate population is over thirty million. Although sample size meets the minimum criteria as suggested by Sekaran (2003) yet there may be some possibilities it may not represent the true characteristics of the target population.

CROSS-SECTIONAL STUDY

The instant study is a cross-sectional study in the sense that information about the respondent is noted only. It may be more suitable if the required information is obtained through observation within a time frame. This study cannot maintain any relationship among the variables on the basis of time sequence.

MODERATING FACTOR

Because of the lack of resources and shortage of time, the focus of the study remained only to test the direct and mediating relationship between the independent variables and dependent variables. It may be possible that a moderate factor if included in the study may bring a more accurate result or different outcome for the same study.

SELF-REPORT MEASUREMENT

An effort has been made to obtain a true response from the entrepreneurs on the research questionnaire. Still, there is a possibility, and it is not with no doubt that some respondents may exaggerate while giving information about their income and showing their understandability for managing money. Their information may be more biased for some questions and low for others. It may be possible that some respondents want to transmit their answers in a different format.

RECOMMENDATIONS FOR FUTURE RESEARCH

After discussing the various limitation of the study, right here are some recommendations for future researchers which can be useful in drawing a more suitable and accurate result. The study is to be conducted through a rigorous process as a larger sample size for better illustration of the characteristic of the target population. Furthermore, these samples may be taken proportionately in accordance with the population of each part of the province. Future research may also use longitudinal studies. Further studies may be conducted to deeply analyse agricultural competence and its implementation through longitudinal research. And add new antecedents of agricultural entrepreneurial intention to get better results. The future researcher may measure the strength and trend of the relationship between the independent variable, dependent variable and mediating variable by adding any moderating factor including opportunity perception, behavioural intention, gender or any other variable that suits the study. Future research should use both close or open-end questions for the better understandability of a problem being faced by the respondents at a particular time. The future researcher may also additionally use a distinctive approach to obtain statistics about the respondents. They may additionally use observation methods, interviews, conversations about the topic. Further, the future researcher can also use social cognitive theory or any other theory that might be helpful or suits the study.

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