

# Digital Competencies of Students Towards the Development of Intergenerational Family Business

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**Abstract.** *The development of entrepreneurial education programs in universities have a positive impact on the intentions of students to run their own businesses. The aim of the article is to demonstrate that the generation's digital competencies could play an essential role in the development of intergenerational family businesses. The third-generation family members have grown up with technology and possess a unique set of skills and knowledge that can be leveraged to modernize and improve their family business. Research was carried out in 2023 at the University of Ruse with 434 learners. The study shows that students' intention to become entrepreneurs is significantly altered as a result of the acquisition of basic digital skills and competencies.*

**Keywords:** digital competencies, family business, intergenerational theory, entrepreneurial education, digital economy, business education

## Introduction

Each industrial revolution brings new technological progress that involve dramatic changes in society and economics. As a result, society needs to adapt to the new reality. Our society is now a digital one and change is taking place at an international level (Jewell, 2020; Sánchez-Caballé et al., 2021). The digital revolution that has brought about this situation is the result of the speedy development of technology which has improved access to knowledge and information, as well as its administration and circulation (Fang et al., 2018).

In today's digital economy, which is extremely competitive, people are trying to start their own family business and manage their own incomes. A family business is a type of business that is owned, managed, and operated by family members, either by one or multiple generations of the same family.

Different studies in entrepreneurship and business education at higher education institutions have reported on the gap between academia and entrepreneurial process.

The development of the entrepreneurial capacity of European citizens and organizations is one of the key policy objectives for the EU and the Member States. In 2019 the European Commission has explicitly declared in the Strategic Innovation Agenda the key role of the universities to promote and support a new generation of entrepreneurs – students with both technological and entrepreneurial skills (Bakracheva et al., 2020).

On the one hand the improvement of entrepreneurial educational programs in universities would provide students with the necessary skills, knowledge, and competencies. By exposing students to entrepreneurship, providing mentorship and support, offering hands-on experience, and creating networking opportunities, universities could support students turn their entrepreneurial intentions into successful businesses.

On the other hand, the bettering of entrepreneurial education programs in universities have a positive impact on the intentions of students to run their own businesses. Also, there is a great need for the education process to be better adapted to the Principles of Responsible Management Education in order to improve the social cooperative responsibility of the entrepreneurs (Kostadinova et al., 2019).

Following are different approaches in which these programs could be connected to young people's entrepreneurial intentions:

**Exposure to entrepreneurship:** the students may not have considered entrepreneurship as a career option. By offering educational programs that focus on entrepreneurship, universities will expose young people to this field and provide them with the necessary skills and knowledge to pursue it.

**Support and mentorship:** entrepreneurship could be a challenging path and having access to support and mentorship – valuable. Entrepreneurial educational programs in universities provide students with access to experienced entrepreneurs and business professionals offering guidance and support.

**Hands-on experience:** entrepreneurship is a practical field, and providing students with hands-on experience could be beneficial. Some universities offer incubator programs that allow students to work on real-world business projects, providing them with valuable experience that support them succeed in their own entrepreneurial ventures.

**Networking opportunities:** entrepreneurship often requires building a strong network of contacts, and universities could provide students with opportunities to meet and connect with potential partners, investors, and customers.

**Digital competencies:** having digital competencies could be crucial in the development of intergenerational family businesses. That is why universities should offer a wide range of educational programs and courses that support students to build knowledge in computer science, information technology, digital marketing, data science, web development, etc.

## Literature review

### *Intergenerational family business theory*

Different research in the literature have analyzed the relationships between intergenerational consistency, efficiency, and digital innovation, highlighting the difficulties of digitalization in a conservative environment, such as that of family businesses (Woodfield, 2019; Yu, 2017).

Intergenerational family business theory is a framework that explains how family businesses evolve and transition from one generation to the next. It helps to understand the unique challenges and opportunities that arise in family businesses and how these can be managed across generations.

The concept of intergenerational family businesses under the international academic network INTERGEN propose quite a different approach. The initiative for a new business is done by the children, who integrate their parents and the classic example is: The grandparents produce grapes; The parents produce wine (including the grapes of their parents); The children create an on-line shop and they also sell the grapes and the wine of their relatives. (Pavlov, et al., 2017)

The intergenerational family business theory identifies three key stages in the life cycle of a family business: the founder stage, the sibling partnership stage, and the cousin consortium stage. In each of these points, the family and the business systems face different challenges, and it is essential to manage these challenges effectively to ensure the long-term success of the family business.

The theory also emphasizes the importance of good governance structures and processes in family businesses, including communication, decision-making, and conflict resolution. It suggests that effective management helps to control the complex interactions between the family and business systems, and to create a shared vision for the future of the business across generations.

Furthermore, intergenerational family business theory provides a useful framework for understanding the dynamics of family businesses and the challenges that arise when transitioning the business to the next generation. By applying the principles of the theory, family businesses would improve their chances of long-term success and continuity across generations.

### ***Learning theories relevant to business education***

Business and education are two extraordinary opportunities that need to be interconnected in order to develop the students' competencies required for building the societies of the future. The learning environment plays an important role in raising the digital competencies and shaping entrepreneurial skills in students.

Extremely important is the power that education has in developing the skills that generate an entrepreneurial and business mindset and in preparing future leaders for solving more complex, interlinked, and fast-changing problems.

Following this line of thought, the article noted the key educational theories and concepts that are relevant in business education. By incorporating these education theories into business education, teachers create more effective and engaging learning experiences for their students and support to prepare them for success in the real-world business (Schunk, 2012):

**Behaviorism:** Behaviorism is a theory that focuses on observable behaviors and the environment in which they occur. In business education, behaviorism could be applied through methods like behavior modeling and reinforcement to teach skills such as leadership, communication, and problem-solving.

**Constructivism:** Constructivism is a theory that emphasizes the importance of actively constructing knowledge and understanding through experiences and reflection. In business education, constructivism could be applied through methods like case studies and problem-based learning, where students are given opportunities to actively engage with and apply business concepts in real-world situations.

**Experiential Learning:** Experiential learning is a theory that emphasizes the importance of learning through experience and reflection. In business education, experiential learning could be applied through methods like simulations and group projects, where students are given opportunities to apply business concepts in practical settings.

**Andragogy:** Andragogy is a theory that focuses on the unique characteristics of adult learners and emphasizes self-directed learning. In business education, andragogy could be applied by encouraging students to take ownership of their learning and providing opportunities for self-directed exploration and discovery.

**Cognitive Load Theory:** Cognitive load theory is a theory that focuses on the amount of mental effort required for learning and the limitations of working memory. In business education, cognitive load theory could be applied by breaking down complex concepts into smaller, more

manageable parts and providing opportunities for students to practice and reinforce their learning over time.

It should be noted that for business education to be successful, continuous improvement in teaching and learning quality and effectiveness is necessary. Traditional methods for teaching, learning and assessment in business education neglect critical thinking, problem-solving and decision making. The innovative educational methods that use the technology are those that motivate the students, increase their creativity level and their digital competencies. Traditional training practices have a negative impact, while modern methods act positively and increase the attractiveness of the course.

Important indicators for measuring the performance of university-business links include the progress in entrepreneurial attitudes, perceptions and intentions of students taking entrepreneurship modules.

### ***Digital transformation of family business***

The digital transformation of family businesses is an important process that has become increasingly relevant in recent years. Information and communication technology (ICT) have transformed the nature of a great variety of entrepreneurial processes and outcomes. With the rise of new technologies and digital platforms, family businesses are finding new ways to connect with customers, streamline operations, and drive growth.

One of the keyways that family businesses are embracing digital transformation is by implementing new technologies to improve the specific operations. This can include the use of data analytics to better understand customer behavior and preferences, automation to streamline processes and reduce costs, and cloud computing to enable remote work and collaboration.

In addition, family businesses are also adopting digital marketing strategies to reach new customers and expand their online presence. This can include social media marketing, email marketing, and search engine optimization (SEO) to improve website visibility and attract new customers.

Another key aspect of digital transformation for family businesses is the development of new digital products and services. This can include the creation of new e-commerce platforms, mobile applications, and other digital tools that could benefit family businesses, reach new customers and expand their offerings.

Overall, the digital transformation of family businesses is a complex and ongoing process that requires a deep understanding of the business and its unique needs. By embracing digital technologies and strategies, family businesses can improve their operations, increase their competitiveness, and better serve their customers in a rapidly changing digital age.

Beyond the positive picture, the digital transformation of business and life brings an undisguised problem: older people remain at risk of social exclusion, and even good digital competence does not reduce this risk among the most senior. Age has been identified as one of the significant barriers to using online services and a critical factor in digital exclusion (Heponiemi et al., 2022).

The intergenerational business model has the potential to solve this significant problem for every society – the exclusion of certain social groups, as collaboration and engagement between different generations, will encourage the development of digital competencies of a different nature in older people as well.

Digital competence is becoming increasingly important in today's world as technology continues to play a significant role in many aspects of our lives, from education and employment to social interaction, entertainment, and business (Petrova & Atanasova, 2019).

Digital competence, as defined by the European Union's Digital Competence Framework (DigComp), is the set of knowledge, skills, and attitudes required to use digital technology effectively and responsibly. DigComp 2.2 specifically focuses on the use of digital technology for communication, collaboration, and problem-solving in a work context (Vuorikari, 2022; Ochoa Pacheco, 2023).

The digital competence framework is cross-curricular and makes it possible to better develop digital competence across subjects in the university. Incorporating DigComp 2.2 into business education is essential to prepare students for the modern reality and ensure they have the skills and knowledge necessary to succeed in a digital-first world.

The DigComp framework identifies the key components of digital competence in 5 areas: 1) Information and data literacy. 2) Communication and collaboration. 3) Digital content creation. 4) Safety. 5) Problem solving.

Some of the specific skills and competencies associated with digital competence include basic computer skills, digital literacy, information literacy, media literacy, online safety and security, digital citizenship, and the ability to adapt to new technologies and tools. Integrating digital competencies in entrepreneurial education requires careful planning, creating a digital curriculum, using digital tools, providing real-world experience, encouraging collaboration, and emphasizing continuous learning.

The third generation's digital competencies play a crucial role in the development of intergenerational family businesses. As digital natives, third-generation family members have grown up with technology and have a unique set of skills and knowledge that can be leveraged to modernize and improve their family business.

ITU (2018) categorized digital skills as: basic, intermediate, and advanced:

**Basic digital skills** foster competency in interaction with basic digital tools, basic skills level required to use computers, smartphones, software (word processors, applications), online operations (Internet, search engines, social networks, e-commerce) and communication media.

**The Intermediate digital skills** are needed to configure digital devices to create and use digital content or enhance digital tools through basic programming skills, basic knowledge of programming language, such as spreadsheet management through programming, front-end web design or other languages that are specific to specific domains (accounting, enterprise resource planning, etc).

**Advanced digital skills** are needed for developing, designing, producing, installing, and managing of computer software systems. It is advanced knowledge achieved through specific curriculum dimensions to improve digital competencies, programming skills and advanced aspects of specific digital branches (artificial intelligence, virtual reality, machine learning, Internet of things, networking, big data, hardware design, etc).

The ITU (2020) pointed out that digital competencies are highly demanded to participate in the labor market and recommended that digital skills should be integrated in education and training, to enable students to participate in the modern digital economy. In business education digital competencies comprises all aspects of teaching and learning and help students to acquire basic digital skills and knowledge. Educational institutions should continue to incorporate strategies to educate students with skills to use digital technology to communicate, find information

and purchase goods/services, use, evaluate and configure complex digital systems, and skills to build software.

An up-to-date review of digital skills is offered by Imjai et al. (2023). They analyze the existing literature and derived the following main aspects of these competencies:

*Digital tools*: working effectively with essential technologies and relevant applications in both professional and personal contexts.

*Digital creativity*: using technology to promote innovative thinking.

*Digital communication*: a skill of extreme importance and effect in the digital age that family businesses have the opportunity and challenge to develop.

*Digital collaboration*: involves the ability to work seamlessly with others through digital means and has the potential to improve team effectiveness and foster innovation;

*Digital life*: integrating digital technologies into everyday life, a skill considered the foundation of overall digital competence.

These aspects can be seen as a potential point of contact between the generations employed in family businesses. The selection and application of the most suitable digital tools for the respective business, the promotion of collaborations, effective communication and the stimulation of creativity in the digital age are based on their skillful and moderate use in everyday life.

## Methodology

The research was carried out in 2023 at the University of Ruse “Angel Kanchev” with 434 respondents.

The scientific team has put two hypotheses:

**Hypotheses 1:** The respondents would like to learn how to deal with their relatives to develop a joint intergenerational family business.

**Hypotheses 2:** The respondents would prefer to develop joint businesses with their children rather than with their parents or siblings.

On the basis of these two hypotheses, it would be possible to discuss some improvements of the educational content.

To carry out this study, a quantitative methodology with survey-based methods has been previously designed under the INTERGEN international academic community.

The target group are active students and alumni both from the University of Ruse “Angel Kanchev”. All of them have been approached by Messenger in 2023 with no limits about gender, age, ethnic, religious or other limitations. The answers have been collected in a google form and processed in an electronic table.

The instrument used for this study is an online questionnaire with Likert scale for the answers where 1 stands for No, while 5 stands for Yes.

In total the questionnaire consists of 57 statements and for the purpose of this specific study we will analyze the answers of the next questions:

Q37. I would like to learn more about how to interact with my relatives when I start some neoclassic intergenerational family business with them (INTERGEN).

Q46. Would you develop business relations with at least one representative of the SECOND generation (among your parents)?

Q47. Would you develop business relations with at least one representative of the THIRD generation (among your brothers, sisters and other siblings)?

Q48. Would you develop business relations with at least one of your children?

On the base of Q37 it would be possible to check Hypotheses 1, while on the base of Q46,47,48 it would be possible to check Hypotheses 2.

## Results and discussions

### Results

In total 434 respondents gave their answers - 338 females and 96 males. These 434 respondents are also divided by their level of study – 223 are with a bachelor degree or still have bachelor classes, while 211 are masters or master students.

**Table 1: Answers to the question 37**

| Answers to Q37 | Total             | Females           | Males            | Bachelors         | Masters           |
|----------------|-------------------|-------------------|------------------|-------------------|-------------------|
| 1. No          | 50 11,5%          | 40 11,8%          | 10 10,4%         | 23 10,3%          | 27 12,8%          |
| 2. Rather No   | 47 10,8%          | 34 10,1%          | 13 13,5%         | 23 10,3%          | 24 11,4%          |
| 3. N/A         | 96 22,1%          | 76 22,5%          | 20 20,8%         | 50 22,4%          | 46 21,8%          |
| 4. Rather Yes  | 77 17,7%          | 54 16,0%          | 23 24,0%         | 39 17,5%          | 38 18,0%          |
| 5. YES         | 164 37,8%         | 134 39,6%         | 30 31,3%         | 88 39,5%          | 76 36,0%          |
| <b>Total:</b>  | <b>434</b> 100,0% | <b>338</b> 100,0% | <b>96</b> 100,0% | <b>223</b> 100,0% | <b>211</b> 100,0% |

Source: Authors' own research.

Most of the respondents (55,5%) are willing to learn more how to interact with their relatives when they start some neoclassic intergenerational family business with them. Both genders have a positive attitude towards it - females (55,6%) and males (55,2%); the same attitude exists in the bachelors (57,0%) and the masters (54,0%).

**Table 2: Answers to the question 46.**

| Answers to Q46 | Total             | Females           | Males            | Bachelors         | Masters           |
|----------------|-------------------|-------------------|------------------|-------------------|-------------------|
| 1. No          | 56 12,9%          | 46 13,6%          | 10 10,4%         | 30 13,5%          | 26 12,3%          |
| 2. Rather No   | 44 10,1%          | 32 9,5%           | 12 12,5%         | 19 8,5%           | 25 11,8%          |
| 3. N/A         | 78 18,0%          | 62 18,3%          | 16 16,7%         | 34 15,2%          | 44 20,9%          |
| 4. Rather Yes  | 85 19,6%          | 61 18,0%          | 24 25,0%         | 40 17,9%          | 45 21,3%          |
| 5. YES         | 171 39,4%         | 137 40,5%         | 34 35,4%         | 100 44,8%         | 71 33,6%          |
| <b>Total:</b>  | <b>434</b> 100,0% | <b>338</b> 100,0% | <b>96</b> 100,0% | <b>223</b> 100,0% | <b>211</b> 100,0% |

Source: Authors' own research.

Most of the respondents (59,0%) are willing to develop business relations with at least one of their parents. This positive attitude is in both genders - females (58,6%) and males (60,4%); the same attitude exists in the majority of both the bachelors (62,8%) and the masters (55,0%).

**Table 3: Answers to the question 47.**

| Answers to Q47 | Total             | Females           | Males            | Bachelors         | Masters           |
|----------------|-------------------|-------------------|------------------|-------------------|-------------------|
| 1. No          | 60 13,8%          | 49 14,5%          | 11 11,5%         | 28 12,6%          | 32 15,2%          |
| 2. Rather No   | 36 8,3%           | 26 7,7%           | 10 10,4%         | 19 8,5%           | 17 8,1%           |
| 3. N/A         | 76 17,5%          | 62 18,3%          | 14 14,6%         | 35 15,7%          | 41 19,4%          |
| 4. Rather Yes  | 84 19,4%          | 63 18,6%          | 21 21,9%         | 32 14,3%          | 52 24,6%          |
| 5. YES         | 178 41,0%         | 138 40,8%         | 40 41,7%         | 109 44,9%         | 69 32,7%          |
| <b>Total:</b>  | <b>434</b> 100,0% | <b>338</b> 100,0% | <b>96</b> 100,0% | <b>223</b> 100,0% | <b>211</b> 100,0% |

Source: Authors' own research.

Most of the respondents (60,4%) are willing to develop business relations with at least one of their siblings. Both genders (females - 59,5% and males - 63,5%) are quite positive about it, as well the bachelors (63,2%) and masters (57,3%).

**Table 4: Answers to the question 48.**

| Answers to Q47 | Total      |               | Females    |               | Males     |               | Bachelors  |               | Masters    |               |
|----------------|------------|---------------|------------|---------------|-----------|---------------|------------|---------------|------------|---------------|
| 1. No          | 23         | 5,3%          | 21         | 6,2%          | 2         | 2,1%          | 10         | 4,5%          | 13         | 6,2%          |
| 2. Rather No   | 11         | 2,5%          | 8          | 2,4%          | 3         | 3,1%          | 6          | 2,7%          | 5          | 2,4%          |
| 3. N/A         | 67         | 15,4%         | 51         | 15,1%         | 16        | 16,7%         | 37         | 16,6%         | 30         | 14,2%         |
| 4. Rather Yes  | 82         | 18,9%         | 58         | 17,2%         | 24        | 25,0%         | 29         | 13,0%         | 53         | 25,1%         |
| 5. YES         | 251        | 57,8%         | 200        | 59,2%         | 51        | 53,1%         | 141        | 63,2%         | 110        | 52,1%         |
| <b>Total:</b>  | <b>434</b> | <b>100,0%</b> | <b>338</b> | <b>100,0%</b> | <b>96</b> | <b>100,0%</b> | <b>223</b> | <b>100,0%</b> | <b>211</b> | <b>100,0%</b> |

Source: Authors' own research.

Most of the respondents (76,7%) are willing to develop business relations with at least one of their children. Both genders (females - 76,3% and males - 78,1%) show a high level of willingness to keep business ties with their children. The same supportive intentions exist in the bachelors (76,2%) and the masters (77,3%).

### **Discussion**

The data in Table 1 show that hypothesis 1 is true - the respondents would like to learn how to deal with their relatives to develop some joint intergenerational family businesses. In total, the negative answers ("1.No" and "2.Rather No") are 22,3%, which is almost equal to the number respondents who are not sure if they want to learn how to deal with their relatives about joint intergenerational family businesses (22,1%).

The data in Table 2,3 and 4 show that hypothesis 2 is true - the respondents would prefer to have business relations with their children rather than with their parents or siblings. But all answers in these tables are quite positive about the development of family businesses:

- Majority of the respondents (59,0%) answer with "4.Rather Yes" and "5. YES" about their willingness to develop business relations with at least one of their parents. The negative answers ("1.No" and "2.Rather No") are 23,0%.

- Majority of the respondents (60,4%) answer with "4.Rather Yes" and "5. YES" about their willingness to develop business relations with at least one of their siblings. The negative answers ("1.No" and "2.Rather No") are 22,1%.

- Majority of the respondents (76,7%) answer with "4.Rather Yes" and "5. YES" about their willingness to develop business relations with at least one of their children. The negative answers ("1.No" and "2.Rather No") are only 7,8%.

These numbers show that the respondents are quite positive to develop family businesses and the educational system should increase their digital competence in entrepreneurship to support the third generation in the INTERGEN concept (Pavlov, at al., 2017; Bakracheva, at al., 2020). Some examples are proposed below.

There is no absolute evidence for a positive correlation between developed digital competencies and an individual's entrepreneurial attitude (Doncheva, 2017). Logic suggests that the more digital skills a person acquires, the more digital business opportunities open to him. But in fact, the entrepreneurial intention is also influenced by many other factors, among them social, political, and economic. Such unknowns can essentially be argued to be excluded in intergenerational businesses, as it is specific to them that there is actual entrepreneurial activity,



not just intention. Therefore, the developed digital competencies of one or more of those engaged in intergenerational business would work in the direction of increasing the innovativeness, efficiency and competitiveness of the respective business unit. From this perspective, digital skills can be vital to preserving traditional family businesses, looking for ways to adapt them to the new digital realities in a win-win way for all stakeholders.

The latter conclusion is one of the reasons for the strong and growing connection between digital competence and entrepreneurial educational programs in universities. In today's rapidly changing and technology-driven world, being digitally competent is essential for anyone looking to start a business or succeed in the workforce. At the same time, entrepreneurship programs provide students with the skills and knowledge they need to create and run their own businesses.

Here we propose some examples of how the digital competence and the entrepreneurship education can intersect:

- Digital marketing strategies. With the rise of social media and e-commerce, digital marketing has become increasingly important for businesses to reach their target audiences. Third-generation family members can use their understanding of social media platforms, search engine optimization (SEO), and other digital marketing tools to promote their family business online and reach new customers.

- New technologies and digital solutions to streamline business operations and workflows. For example, they can introduce new project management software, automated financial management systems, or customer relationship management tools to increase efficiency and reduce costs.

- New revenue streams. For example, they can develop and launch new digital products or services that cater to the changing needs of customers in the digital age. This can include developing mobile apps, creating e-learning courses, or launching an e-commerce store.

Third generation's digital competencies may bring significant benefits to intergenerational family businesses. By leveraging their understanding of digital marketing, implementing new technologies, and creating new digital revenue streams, they can help their family business stay relevant and competitive in today's rapidly evolving digital age.

In the context of e-commerce, third-generation family members are expected to cope with setting up an online store, accepting payments, and managing orders and shipping.

With the rise of big data, being able to analyze and interpret data is increasingly important (Shoilekova, 2021; Atanasova & Atanasova, 2018). In the context of data analysis, third-generation family members are expected to use specialized software and tools, such as statistical software packages and programming languages, spreadsheets, databases, and data visualization software. Third-generation family members may use their digital competencies to contribute to their family business to innovate and develop new products and services. For example, they might use 3D printing technology to create prototypes, or develop new software applications to meet specific customer needs.

## Conclusions and contributions

Universities are increasingly recognizing the importance of these skills and incorporating them into their curricula. Students who can combine these two areas of knowledge will be well positioned for success in today's digital economy.

The intersection of digital competence and entrepreneurship education is an exciting and rapidly evolving field. In summary, digital competencies can help intergenerational family businesses to communicate more effectively, reach new customers, reduce costs, improve

efficiency, and facilitate knowledge transfer between generations. By embracing digital technologies, intergenerational family businesses can position themselves for success in the digital age.

Relating digital competencies with intergenerational family business could help to ensure that the family business is well-equipped to navigate the challenges and opportunities of the digital age, and to remain competitive and successful over the long term.

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