

## Article

# Digitalization in Entrepreneurship: Unveiling the Motivational and Demographic Influences towards Sustainable Digital Sales Strategies

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**Abstract:** Digitalization is incrementally transforming business practices, particularly in sales and digital marketing, although the factors motivating entrepreneurs to adopt digital technologies in sales strategies remain underexplored. Consequently, the aim of our research is to identify the factors that influence the use of digital technologies in sales. This research elucidates the interplay between demographics and entrepreneurial motivations, utilizing data from the Global Entrepreneurship Monitor, involving 464 entrepreneurs in Slovenia and Croatia, analyzed through logistic regression. Notably, demographic factors, including gender, age, and education, do not significantly influence digitalization adoption in sales strategies. Among entrepreneurial motives, only the aspiration “to make a difference in the world” propels entrepreneurs towards considering digital sales approaches, while other motivations do not have a significant influence. Despite extensive studies on demographic factors influencing digital technology adoption, a consistent trend is conspicuously absent, necessitating an intricate examination of various dimensions of digital business transformation. Furthermore, our findings underscore that, while digitalization is acclaimed for enhancing companies’ profitability, entrepreneurs motivated by altruistic goals demonstrate a pronounced proclivity to integrate digitalization into sales, signifying that digitalization’s pragmatic utility extends beyond merely amplifying profitability and growth, insinuating a more integrative role in sculpting sustainable entrepreneurial practices and business models.



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**Keywords:** digital technologies in sales; demographic factors; motives for entrepreneurship; early-stage entrepreneurs; altruism; logistic regression

## 1. Introduction

Companies face numerous challenges in the contemporary business environment, including the impact of digital technology on sales. Digitalization, driven by the development of computers, the internet, artificial intelligence, and other technological innovations, has revolutionized the way companies operate. The ongoing evolution of digital technologies from the third industrial revolution [1] represents a gradual societal and business process transformation where digital innovations have replaced and enhanced analog processes [2]. This transformation focuses on integrating business processes with the use of new hardware and software [3].

The extensive impact of digitalization on entrepreneurship encompasses various aspects such as company strategies, organization, information technologies, supply chains, production processes, and marketing. Entrepreneurs must confront the challenges posed by digitalization and make informed decisions regarding the adoption of digital technologies in their companies to maintain a competitive advantage. Digitalization facilitates easier business operations and cost reduction, encourages innovation, and necessitates adaptations to changing consumer habits [4]. Moreover, digitalization holds particular significance for entrepreneurship as it generates new entrepreneurial ideas, representing valuable market

opportunities. Therefore, the process of digitalization reinforces entrepreneurial activity [5]. These ideas have changed business models across all levels, simplifying customer communication and outreach and business partner search, and streamlining cost-efficient business processes [6]. The process of digitalization relies on the development of cloud computing, analytical processing of extensive databases, mobile internet, the Internet of Things, the utilization of artificial intelligence, and the integration of physical and virtual spaces [2,7]. Entrepreneurs aim to achieve two primary goals through the adoption of these technologies: (1) reducing the risk of non-competitiveness, and (2) seizing opportunities to explore new markets and develop new products [8].

The decision to digitalize business processes hinges on an entrepreneur's knowledge of digital technologies [9], enabling them to assess the relative advantages of these technologies compared to existing processes [10]. However, decisions regarding the digitalization of business processes are also influenced by available financial and personnel resources and the pressures to maintain a competitive market position. Entrepreneurial characteristics are also important, including proficiency in digital technologies, personal traits [11,12], and attitudes towards digitalization [13].

Although the impact of various demographic factors on the acceptance of digital technologies among entrepreneurs and the general population has been extensively studied [11,14–16], research specifically focusing on digital technologies in sales is scarce, apart from the study by Barrera Verdugo [11]. It is also important to highlight that findings on the impact of demographic factors on the adoption of digital technologies in entrepreneurship are highly inconsistent, indicating the need for further research in this area [11,14,17,18]. Furthermore, research on the effects of motivational factors for establishing a company on the acceptance of digital technologies is scarce. Those few studies that do delve into this area often define entrepreneurial motives quite differently, making comparison of results challenging. Among the most frequently examined motives are the desire for higher income and family tradition [11,19]. Consequently, further research in this field is needed. Additionally, the impact of the business development stage on the adoption of digital technologies remains inadequately explored. In our research, we pose the following research question: which factors in entrepreneurship influence the frequency of planning the use of digital technologies in sales? Hence, the goal of our study is to explore the adoption of digital technologies in sales, and to analyze demographic factors and entrepreneurial motives influencing the integration of digital technologies into sales processes. Additionally, we aim to ascertain whether differences exist in the likelihood of adopting digital technologies between early-stage and established entrepreneurs. Conducted on a sample of Slovenian and Croatian entrepreneurs, the research also delves into potential disparities in the frequency of introducing digital technologies in sales among entrepreneurs from both countries.

The article begins with a literature review, which includes a presentation of digitalization in sales. Demographic factors and entrepreneurial motives, and their impact on the adoption of digital technologies in sales, are also presented. We also present the importance of the company's developmental stage for the adoption of digital technologies in sales, as well as factors in both analyzed countries that could impact the integration of digital technologies. Hypotheses derived from these discussions are formulated for testing. The research methodology and data collection process are subsequently described in the Section 3. The results from statistical analysis are presented in the Section 4, followed by a discussion and interpretation of findings, highlighting the significance of key variables. The article concludes by addressing limitations encountered during the study and offering directions for future research in the field of using digital technology in sales.

## 2. Literature Review

Digitalization in the field of sales is based on the use of different digital technologies, which allow companies to receive orders 24/7 [20]. The first option is the establishment of their own online store, typically within their website, which can be created by company's

employees or purchased as a software solution [21]. The second option for implementing online sales is to utilize existing online marketplaces offered by various companies, which is used by many different sellers [22]. Online sales based on Web 2.0, also known as social commerce, are becoming increasingly important. This type of sales relies on the sharing of ratings, reviews, and recommendations by users or customers on different social networks and platforms [23].

Digital marketing is an important component of digital technologies in sales. It refers to the method of marketing conducted through electronic devices on websites, social networks, blogs, emails, search engines, etc. [24]. To conduct effective digital marketing, it is crucial to collect customer data and analyze it, enabling the customization of offers for different customer segments [25]. Artificial intelligence also plays a significant role in identifying patterns in the collected data, allowing for better targeting of potential customers [26].

### 2.1. Demographic Factors

The entrepreneur's decision to digitize business processes, including online sales, is influenced by personal beliefs, knowledge of digitalization [11], and financial capabilities [17]. These three aspects are significantly influenced by demographic factors such as age, gender, and education. The age of the entrepreneur shapes their beliefs about digitalization. Past entrepreneurial experiences [15] and the accumulation of savings, enabling investments in digitalization [11], are also important in relation to age. Gender influences the perception of the entrepreneurial environment, which in turn shapes motivation and goals in entrepreneurship. For female entrepreneurs, meeting social needs is more important than business results [17,27]. Female entrepreneurs also prioritize their core activities and invest less in digitalization [17]. Education primarily affects knowledge of the effects of digitalization, which also influences personal beliefs about digitalization. However, besides education level, the field of education and additional education in the field of digitalization are important factors [11,12], which may not necessarily reflect the general level of education.

#### 2.1.1. Age

The relationship between the entrepreneur's age and the adoption of digital solutions can be explained by the fact that as entrepreneurs age, the level of digitalization used in their businesses decreases [11,15]. As entrepreneurs age, they feel more uncomfortable with the adoption of new technology [14,16], and their optimism and innovativeness in adopting new technology also decrease [16]. However, with age, the aspect of gaining experience also becomes important, as more experienced entrepreneurs implement more digital technologies in their business processes [15]. This is also supported by Fonseka et al. [18], who found that entrepreneurs in the age group of 41 to 50 years use artificial intelligence in sales to a greater extent compared to other age groups. This can also be explained by the fact that younger entrepreneurs may not have accumulated enough savings to invest in the digitalization of business processes [11].

However, alongside the mentioned artificial intelligence, there are numerous other digital technologies available for entrepreneurs in sales, which are more affordable due to their wider prevalence, and hence accessible to entrepreneurs with lower capital accumulation. Furthermore, Eurostat [28] data indicate that younger generations are more digitally literate, implying greater experience with digital technologies. Therefore, we formulate the following hypothesis:

**H1.** *Younger entrepreneurs will more frequently plan the use of digital technologies in sales within the next six months.*

### 2.1.2. Gender

It has been found that men are more likely to digitize business processes [17]. The same finding applies to the more specific case of digitizing sales through the adoption of online sales [11]. However, Fonseca et al. [18] interpreted the relationship between gender and the adoption of online sales differently, as they did not find gender differences in the use of online sales. However, they found that male entrepreneurs, to a greater extent than their female counterparts, incorporated artificial intelligence into the online sales process. These findings are consistent with the insight of Astuti and Nasution [14] that male entrepreneurs are more innovative and more easily embrace new technology. A different relationship is explained by Ferreira et al. [15], who found that female entrepreneurs more frequently use online sales in their businesses. This is also supported by Ramayah et al. [16], who, contrary to Astuti and Nasution [14], found that female entrepreneurs are more innovative and experience less discomfort and uncertainty in adopting new technologies.

Considering the findings of previous research, there is no consistent conclusion about the impact of gender on the use of digital technologies in entrepreneurship. This diverse range of findings could be attributed to other characteristics of the samples used in the studies. These samples vary not only in terms of age and educational structure but also in terms of culture or geographical location where the research was conducted. Indeed, the role of gender in society is perceived differently in various cultures, consequently affecting the confidence of each gender in digital literacy and their decision making regarding the use of digital technologies [29–31]. Among all the mentioned studies, the study by Ferreira et al. [15] conducted on a Portuguese sample is geographically and culturally the closest. Eurostat data [28] also indicate that among the working population in Portugal, women possess more digital skills, and a similar but less pronounced trend can be observed in Slovenia and Croatia. Thus, we propose the following hypothesis:

**H2.** *Female entrepreneurs will more frequently plan the use of digital technologies in sales within the next six months.*

### 2.1.3. Education

The findings regarding the relationship between education and the adoption of digital technologies are consistent in showing that entrepreneurs with higher education are more likely to use digital technologies [15] or engage in online sales [11]. More educated entrepreneurs tend to be more optimistic and innovative, although they may also experience more uncertainty and discomfort with new technology, with the positive aspects outweighing the negative ones [14,16]. On the other hand, Jaafar et al. [12], who did not find differences in the relationships between gender and age and the acceptance of new technologies, found that higher education reduces uncertainty in adopting new technologies. Based on the presented findings, we formulate the following hypothesis:

**H3.** *Entrepreneurs with higher education will more frequently plan the use of digital technologies in sales within the next six months.*

## 2.2. Entrepreneurial Development Stage

According to the GEM methodology, entrepreneurs are divided into two groups: early-stage and established entrepreneurs. Established entrepreneurs are those who have been in business for more than 42 months. Early-stage entrepreneurs, on the other hand, include those who have been in business for less than 42 months or have intentions to start a business and have been actively engaged in entrepreneurial activities, connected with establishing a company, in the past 12 months, with the condition of being at least a partial owner of the business [32].

With the advancement of digital technologies, they offer increasing possibilities for utilization and subsequent development of new business ideas [4]. These opportunities present a chance for early-stage entrepreneurs to formulate business ideas grounded in digital technologies. Such business concepts must ensure sufficient revenue for the long-term success of the company. This can also be achieved through business internationalization (expanding into foreign markets), wherein digital technologies in sales play an important role [33,34]. In newly established enterprises, the limited resources available for business initiation can hinder digitalization [35]. Additionally, the utilization of digital technologies demands specific skills that the early-stage entrepreneurs might not have, because their educational background is from the field in which the company operates. Acquiring these digital skills can be time-consuming or may require hiring personnel proficient in these skills, which entails extra costs [9,35]. On the other hand, established entrepreneurs possess accumulated resources for digital technology investments. They also possess more experience and better understanding of the market and competition, enabling them to make informed decisions about digital technology investments. Consequently, we formulate the following hypothesis:

**H4.** *Established entrepreneurs are more likely to plan the use of digital technologies in sales compared to early-stage entrepreneurs.*

### 2.3. The Level of Digitalization in Observed Countries

Slovenia and Croatia are located at the crossroads of Central and Southeastern Europe and share an almost two-century period of being part of the same country, which has influenced their common development and interconnectedness. A decisive period for the development of both countries' economies was the post-World War II era when they were part of socialist Yugoslavia, a period characterized by a planned economy and self-management [36]. After gaining independence in 1991 and transitioning to market economies, both countries opened up new opportunities for entrepreneurship. However, the economic environments in both countries gradually started to differ. Slovenia joined the European Union in 2004 and adopted the euro in 2007, while Croatia became an EU member in 2013 and adopted the euro in 2023. Given that rapid digital technology development began in the 21st century, it is expected that approaches to promoting the development, investment, and use of digital technologies differ between the two countries.

One of the potential indicators for assessing the digitalization of the economy is the Digital Economy and Society Index (DESI), as measured by the European Commission. In 2022, Slovenia was ranked 11th based on this index, while Croatia was ranked 21st among EU countries. Slovenia outperforms Croatia in three out of four components of the index: connectivity, integration of digital technologies in businesses, and digital public services, with Slovenia being significantly better in the latter two. Enhanced connectivity (countrywide technology coverage and affordability) facilitates the easier integration of digital technologies into business processes in Slovenian companies. Croatia excels notably in the human capital component, suggesting that Croatians are more proficient in using digital technologies [37,38].

The digitalization of business positively impacts innovation and the number of digital innovations [15,39,40]. Therefore, a country's innovation capabilities can provide insights into its level of digitalization. Močnik and Širec [41] explain that Croatia is transitioning from an efficiency-driven to an innovation-driven economy, whereas Slovenia is already in the latter phase. The European Innovation Scoreboard for 2022 classifies Slovenia as a moderate innovator and Croatia as a modest innovator. Although Croatia has a higher number of innovations among SMEs compared to Slovenia, the factors that promote innovations in Croatia are, on average, worse than in Slovenia. We emphasize those factors that also influence digitalization. Slovenian companies invest significantly more in research and development than Croatian ones, and also receive much more support for this from

the Slovenian government. Slovenia enables more research and development in the public sector and also a better research environment. Additionally, Slovenian companies use information and communication technologies to a much greater extent, not only compared to Croatia companies but also to those in most EU member states. The data also reveal that Slovenia is more successful in exporting high-tech goods and knowledge-based services [42]. Moreover, Slovenia is eight positions higher than Croatia on the 2023 global competitiveness index [43]. Considering that digitalization enhances international business [33,34] and competitiveness [4], it is reasonable to infer that Slovenia's listed export and competitiveness advantages could also contribute to a higher level of digitalization. Surprisingly, despite all of the aforementioned factors, Croatia has 10 percentage points more SMEs with e-commerce sales of at least 1% of turnover compared to Slovenia [44].

Based on the presented data, we conclude that Slovenia offers better conditions for the adoption of digital solutions among entrepreneurs, with its companies investing more extensively in research and development and utilizing information and telecommunication technologies to a greater extent. Export and competitiveness data also indicate a higher level of digitalization in Slovenia. Supporting this conclusion is the fact that in 2019, Slovenia was 14 positions ahead of Croatia in terms of ease of doing business [45]. Consequently, we propose the following hypothesis:

**H5.** *Slovenian entrepreneurs are more likely to plan the use of digital technologies in sales in the next six months compared to Croatian entrepreneurs.*

#### 2.4. Motivational Factors

Motivational factors for entering entrepreneurship are highly diverse and primarily dependent on the individual. The factors influencing an individual's decision to become an entrepreneur can be interconnected, as multiple factors can simultaneously influence the individual's decision, with varying degrees of importance. An individual's attitude towards risk taking also plays a significant role in motivating the establishment of a business, as individuals who are willing to take on greater risks are more likely to choose entrepreneurship [46]. Two important personal traits reflected in motivational factors are innovation and proactivity. Together with risk perception, they form entrepreneurial orientation [47], which encompasses entrepreneurial preferences, beliefs, and behaviors [48], thus also influencing the formation of motivational factors in entrepreneurship. Alongside personality traits that influence entrepreneurial motivation and serve as a prominent motivating factor, the economic environment (unemployment, income etc.), social norms and support, and the status of entrepreneurs in a particular context also play a significant role [49].

Motivational factors can be classified in several ways. One possible classification is based on the division into external and internal factors. External factors are those that arise from the entrepreneur's environment and influence their desire or necessity to become an entrepreneur. These factors may include income or wealth acquisition, social status, and social acceptability. On the other hand, internal factors stem from personal interest in entrepreneurship, based on the desire for success, goal achievement, independence, and similar motives [50]. Individuals can be divided into two groups based on whether they are motivated by internal or external factors in entrepreneurship. Those who choose internal motivational factors are more likely to also list internal factors as their main motivations, compared to other motivations. Internal factors are also less likely to change over time, as it may be harder for changes in the environment to satisfy the desires or aspirations of individuals. For example, if an individual is motivated by the desire to realize their entrepreneurial idea and the wish for independence, the opportunity for higher earnings through employment in another company will be less appealing to them compared to someone for whom the main motivational factor is maximizing income [51].

Another classification divides motivational factors into push and pull factors. Push factors arise from negative circumstances that lead an individual to choose entrepreneurship, while pull factors positively influence an individual's decision to become an entrepreneur [52]. Push factors may include job dissatisfaction, survival necessity, low pay, or unfavorable working hours. On the other hand, pull factors influence individuals to desire entrepreneurship so that they can realize their ideas, become independent, achieve wealth, etc. It has been found that pull factors are significantly more important in an individual's decisions [53].

There are numerous motives for starting a business, which can be categorized and combined in various ways. In our study, as we will be using Global Entrepreneurship Monitor (GEM) data, we will focus on the motives for starting a business addressed in the GEM survey. These include (1) the desire to make a difference in the world by pursuing altruistic goals, (2) the aspiration for wealth creation or higher income, (3) the continuation of a family business or tradition, and (4) the need for survival.

Holzmann and Gregori [54], based on a systematic review of the literature, determined that digitalization is crucial for improving geographical access in social enterprises, enabling them to reach more markets and target groups. They also found that communication based on digital technology enhances the visibility of sustainable businesses and facilitates the implementation of sustainability in communication. However, Solesvik et al. [27] find that, because female entrepreneurs are more frequently motivated by altruistic aspects of entrepreneurship and less concerned with profitability and growth, they face greater challenges in acquiring capital to finance investments in business digitalization. Similar conclusions can be drawn from a gender-neutral sample in Stevens et al.'s [55] study, which investigated the influences on a company's orientation towards social goals. They found that altruistic values have a positive impact on the orientation towards social goals, which is further intensified when the company is performing poorly. This means that companies with a stronger focus on social goals will also face challenges in financing investments in digitalization. Additionally, it has been found that the specific characteristics of social enterprises hinder the implementation of digitalization to the extent possible in for-profit companies [20]. Based on all the presented findings, we propose the following hypothesis:

**H6.** *The importance of motivation for making a difference in the world decreases the likelihood of planning the utilization of digital technologies in sales in the next six months among entrepreneurs.*

Ferreira et al. [15] found that the digitalization of business processes has a positive impact on a company's revenues and competitiveness. This is in line with the findings of Fonseka et al. [18], who indicate that the implementation of online sales enhances business performance. Similar findings were reported by Niyawanont and Wanarat [56], who examined the logistics industry, where the success is positively influenced by digital transformation and digital entrepreneurship. Additionally, it has been proven that the use of digital marketing positively affects multiple financial indicators [57]. Based on all the aforementioned similar findings, we formulate the following hypothesis:

**H7.** *The importance of motivation for higher income and wealth increases the likelihood of planning the utilization of digital technologies in sales in the next six months among entrepreneurs.*

The motivational factor of family tradition in entrepreneurship can influence entrepreneurship in two ways. An individual may choose entrepreneurship because they want to take over and lead the family business in the future, or family entrepreneurial tradition can encourage an individual to establish a new business [58,59]. It has been found that male individuals from families with an entrepreneurial tradition predominantly have entrepreneurial intentions, listing the realization of their own ideas and independence as important aspects of entrepreneurship [58]. The realization of one's own idea can be associated with the motivation for innovation and proactiveness, which, according to Soinen et al. [60], do not have an impact on profitability. This subsequently implies

that entrepreneurs motivated by family tradition will pay less attention to digitalization compared to entrepreneurs who prioritize higher income since Fonseka et al. [18] indicate that implementation of online sales enhances business performance. This is also confirmed by Barrero Verdugo [11], as companies with a family tradition are less likely to establish online sales, promote themselves online, and communicate with customers and suppliers. As a result, we formulate the following hypothesis:

**H8.** *The importance of motivation of family tradition decreases the likelihood of planning the utilization of digital technologies in sales in the next six months among entrepreneurs.*

For individuals who have chosen entrepreneurship out of necessity for survival, it is less likely that they will introduce online sales in their business due to a lack of financial resources. Individuals with low education levels, who cannot find employment, or have difficulty finding it, are forced to become self-employed. Such individuals perform simple and poorly paid work, which leaves them with no opportunity to save money to invest in the development of their business [17]. Contrary findings are presented by Barrero Verdugo [11], who suggests that the motivation for starting a business out of necessity positively influences the use of online sales. Building upon the already mentioned arguments, we also consider that individuals compelled to venture into entrepreneurship for survival frequently undertake poorly compensated tasks for a pre-established group of clients. This situation might lead to a reduced need for the utilization of diverse digital technologies in sales. Consequently, we posit the following hypothesis:

**H9.** *The importance of the survival motive decreases the likelihood of planning the utilization of digital technologies in sales in the next six months among entrepreneurs.*

### 3. Methodology

#### 3.1. Data

In the study, we utilized data from the GEM database for the year 2022, focusing on Slovenian and Croatian entrepreneurs. GEM is an international research project that focuses on monitoring and analyzing the entrepreneurial environment and the activities of entrepreneurs around the world. The data collection methodology used by GEM involves Computer Assisted Telephone Interviewing (CATI), which ensures complete randomness in the selection of respondents and guarantees the anonymity of the participants [61].

Our study is based on a random sample of 2000 individuals from each analyzed country, aged between 19 and 64 years. In our research, we included those individuals who are either already entrepreneurs or express a desire to become entrepreneurs. Specifically, there were 464 entrepreneurs, 235 from Slovenia and 229 from Croatia.

As explanatory variables, we used demographic factors such as gender, education, and age. The education variable was dichotomous, with a value of 0 for entrepreneurs with a secondary school diploma or lower, and 1 for those with more than education beyond secondary school. Age was expressed in years, and male was the reference category for the gender variable.

We added two dichotomous variables to the model that differentiate entrepreneurs based on their country and their stage of development. The reference category for the country variable is Slovenia, and for the entrepreneur development stage (EDS) variable, it is established entrepreneurs.

Entrepreneurs in the GEM survey rate their motivations for starting a business on a Likert scale from 1 to 5, where 1 indicates strong disagreement and 5 indicates strong agreement. The available motives for entrepreneurs are the desire to make a difference in the world (motive 1), the aspiration for higher income and wealth accumulation (motive 2), continuing family tradition (motive 3), and the need for survival (motive 4). Each motive variable is dichotomized, with a value of 0 representing the motive as unimportant for the

entrepreneur (score on a Likert scale of 1, 2, or 3), and a value of 1 indicating the motive as important for the entrepreneur (score on a Likert scale of 4 or 5).

As the dependent variable (*dig\_tech*), we used responses to the question of whether entrepreneurs expect to use more digital technologies in sales in the next six months, with a value of 0 indicating a “no” response and a value of 1 indicating a “yes” response. Therefore, the variable does not measure the actual use of digital technologies in sales but rather the intentions or inclination of the entrepreneur to adopt them.

### 3.2. Data Analysis

To test the validity of the stated hypotheses, we used binary logistic regression. Binary regression is employed to examine the relationships between qualitative or quantitative explanatory variables and a dichotomous dependent variable [62].

According to logistic regression, the probability of a company using more digital technologies in sales in the next 6 months (probability of event 1) follows a logistic cumulative distribution function [62]:

$$P_i(Y_i = 1) = \frac{1}{1 + e^{-\widehat{dig\_teh}}}, \quad (1)$$

for which we estimated the following regression:

$$\widehat{dig\_teh} = \beta_0 + \beta_1 \cdot gender + \beta_2 \cdot age + \beta_3 \cdot education + \beta_8 \cdot EDS + \beta_9 \cdot country + \beta_4 \cdot motive\ 1 + \beta_5 \cdot motive\ 2 + \beta_6 \cdot motive\ 3 + \beta_7 \cdot motive\ 4 \quad (2)$$

In logistic regression, the regression coefficients are challenging to interpret because they are part of the distribution function of the data. Therefore, odds ratios are used for interpretation. An odds ratio represents the ratio between the probability of event 1 occurring and the probability of event 0 occurring. The estimated value of the dependent variable is expressed as the natural logarithm of the odds ratio, representing the ratio between the probability of event 1 occurring and the probability of event 0 occurring [62]:

$$\ln\left(\frac{1 + e^{\widehat{dig\_teh}}}{1 + e^{-\widehat{dig\_teh}}}\right) = \ln\left(\frac{P_i}{1 - P_i}\right) = \widehat{dig\_teh} \quad (3)$$

If a particular explanatory variable increases by one unit (with other variables held constant), the natural logarithm of the odds ratio increases by the value of the regression coefficient for that variable. Consequently, this means that positive estimated regression coefficients imply an increase in the odds ratio and, consequently, the probability that an entrepreneur plans to use digital technologies in sales [62,63].

## 4. Results

### 4.1. Sample Characteristics

Table 1 reveals that in the sample, male entrepreneurs dominate at 62.3%. A third of the entrepreneurs are aged between 35 and 44, while nearly a quarter of them are in the age groups of 25–34 and 45–54. More than half of the entrepreneurs in our sample have tertiary education. Early-stage entrepreneurs dominate the sample, as only a third are established entrepreneurs. The distribution of entrepreneurs is roughly equal between the two analyzed countries. Entrepreneurs are also evenly divided between those planning and those not planning to use digital technologies in sales, with 10% being undecided. By far, the most significant motive for establishing a business is survival (64.4%), while the least important is the motive of family tradition (33.8%), with the remaining two motives being significant for approximately 44% of entrepreneurs.

**Table 1.** Descriptive statistics of the analyzed variables.

Gender	Men	62.3%
	Women	37.7%
Age	18–24	6.6%
	25–34	24.4%
	35–44	33.0%
	45–54	23.6%
	55–64	12.4%
Education	Pre-primary and primary education	1.6%
	Secondary education	44.8%
	Tertiary education	53.6%
Development stage	Established entrepreneurs	37.5%
	Early-stage entrepreneurs	62.5%
Country	Slovenian entrepreneurs	50.6%
	Croatian entrepreneurs	49.4%
Motive 1	Important	43.8%
	Not important	42.5%
	No opinion	13.7%
Motive 2	Important	44.0%
	Not important	38.9%
	No opinion	16.9%
Motive 3	Important	33.8%
	Not important	62.0%
	No opinion	4.2%
Motive 4	Important	64.4%
	Not important	28.1%
	No opinion	7.5%
Use more digital technologies	Yes	43.1%
	No	47.0%
	Maybe	9.9%

#### 4.2. Evaluation of Model Quality and Specification

To ensure the quality of the results, we verified the adequacy of the model specification using the chi-square test. Additionally, we checked for the presence of multicollinearity by calculating the variance inflation factor (VIF).

##### 4.2.1. Adequacy of Model Specifications

The adequacy of the estimated models' specification was tested with a chi-square test, which examines whether the predictive power (model fit to the data) of the estimated model is statistically significantly different from the fitted model without explanatory variables. Therefore, the test assesses whether all regression coefficients are equal to zero [64]. The chi-squared value for our model is 38.00 with 9 degrees of freedom, which means that null hypothesis, all regression coefficients are equal to zero, could be rejected with  $p = 0.000$ , indicating that the model is properly specified.

##### 4.2.2. Multicollinearity

Table 2 displays the VIF and correlation coefficients. The highest VIF value is 1.20, which is significantly below the threshold of 5 indicating the absence of multicollinearity. Additionally, the correlation between individual explanatory variables is weak, with the highest absolute value of correlation coefficients being  $-0.37$  between age and entrepreneur development stage, which is expected, because young entrepreneurs typically start with new businesses. The correlation between the entrepreneur development stage and the country is also higher (0.33).

**Table 2.** Correlation coefficients between explanatory variables and VIF (bold in diagonal).

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Gender (1)	<b>1.05</b>								
Age (2)	0.02	<b>1.20</b>							
Education (3)	0.09 *	−0.10 *	<b>1.11</b>						
EDS (4)	−0.03	−0.37 *	−0.01	<b>1.30</b>					
Country (5)	0.02	0.09 *	−0.07 *	0.33 *	<b>1.13</b>				
Motive 1 (6)	0.02	0.01	0.02	0.00	−0.05	<b>1.05</b>			
Motive 2 (7)	−0.16 *	−0.17 *	−0.04	0.11 *	0.00	0.14 *	<b>1.09</b>		
Motive 3 (8)	−0.09 *	0.08	−0.22 *	−0.13 *	−0.04	0.16 *	0.09 *	<b>1.12</b>	
Motive 4 (9)	0.03	0.02	−0.18 *	0.01	0.06	0.03	0.06	0.07	<b>1.05</b>

\*  $p < 0.05$ .

#### 4.3. Main Regression Results

The logistic regression results in Table 3 show that no demographic factor influences the frequency of planning to use digital technologies in sales. Among the motives, only motive 1 (desire for change in the world) is highly statistically significant, as the odds ratio increases by 2.42 times if this motive is important to the entrepreneur. This is also the largest odds ratio, proving that the importance of motive 1 (desire for change in the world) also has the greatest impact on the likelihood of planning sales digitalization. The estimated coefficients of other motives are not statistically significant, so they do not affect the frequency of planning the use of digital technologies in sales.

**Table 3.** Results of logistical regression.

Variables	Coefficient	Odds Ratio
Constant	−1.44 ***	0.24
Gender	−0.03	0.97
Age	0.00	1.00
Education	0.12	1.13
EDS	0.55 ***	1.73
Country	0.36 *	1.43
Motive 1	0.89 ***	2.42
Motive 2	0.28	1.32
Motive 3	−0.29	0.75
Motive 4	0.03	1.03

\*  $p < 0.10$ , \*\*\*  $p < 0.01$ 

Likewise, the likelihood of planning to use digital technologies in sales depends on the entrepreneur's development stage and country. The variable EDS, which is significant at  $p < 0.01$ , indicates that early-stage entrepreneurs more often plan to use digital technologies, with an odds ratio 1.73 times higher for early-stage entrepreneurs. The variable country is only significant at  $p < 0.10$  and suggests that Slovenian entrepreneurs plan to use digital technologies in sales more frequently. The odds ratio is 1.43 times higher for Slovenian entrepreneurs, which is the lowest among all of the three statistically significant variables.

## 5. Discussion

In our study, we focus on the impact of demographic factors, motives for becoming an entrepreneur, and entrepreneur development stage on the planning of using digital technologies in sales. We estimated the logistic regression model on a sample composed of Slovenian and Croatian entrepreneurs. Three factors positively affect the likelihood of planning to use digital technologies in sales. These are (1) the importance of the altruism motive in entrepreneurs, (2) operating in Slovenia, and (3) being an early-stage entrepreneur. Demographic factors do not influence the frequency of planning to use digital technologies in sales, which also applies to the remaining analyzed entrepreneurial motives. The summary of findings is presented in Table 4, which lists the hypotheses.

**Table 4.** Overview of hypotheses and their confirmation or rejection.

H1	Younger entrepreneurs will more frequently plan the use of digital technologies in sales within the next six months.	Rejected
H2	Female entrepreneurs will more frequently plan the use of digital technologies in sales within the next six months.	Rejected
H3	Entrepreneurs with higher education will more frequently plan the use of digital technologies in sales within the next six months.	Rejected
H4	Established entrepreneurs are more likely to plan the use of digital technologies in sales compared to early-stage entrepreneurs.	Rejected
H5	Slovenian entrepreneurs are more likely to plan the use of digital technologies in sales in the next six months compared to Croatian entrepreneurs.	Confirmed
H6	The importance of motivation for making a difference in the world decreases the likelihood of planning the utilization of digital technologies in sales in the next six months among entrepreneurs.	Confirmed
H7	The importance of motivation for higher income and wealth increases the likelihood of planning the utilization of digital technologies in sales in the next six months among entrepreneurs.	Rejected
H8	The importance of motivation of family tradition decreases the likelihood of planning the utilization of digital technologies in sales in the next six months among entrepreneurs.	Rejected
H9	The importance of the survival motive decreases the likelihood of planning the utilization of digital technologies in sales in the next six months among entrepreneurs.	Rejected

We find that despite numerous studies confirming that various demographic factors have an impact on the use of digital technologies in entrepreneurship, our research did not detect any such influence on the planning of using digital technologies in sales. This means that we reject hypotheses 1, 2, and 3. Previous studies have been inconclusive regarding the importance of gender for the use of digital technologies in entrepreneurship. In this regard, our study aligns with a study by Fonseka et al. [18], which found no gender differences in online sales usage.

The lack of significance of age in the frequency of planning digital technologies in sales could confirm opposing effects of increasing the age of entrepreneurs as described by Ferreira et al. [15]. Younger entrepreneurs tend to use digital technologies more extensively [11], as discomfort with these technologies increases with age [14,16]. However, older entrepreneurs have more experience and resources [11,15], which allows them to use digital technologies more extensively [18]. As both factors act in opposing directions, age cannot be considered a promoter or inhibitor of digital technology usage in entrepreneurship.

The education factor is not statistically significant, although past research has been consistent regarding the impact of education on the use of digital technologies in sales, as it indicates a positive relationship [11,14,15]. However, the significance of education depends on the additional knowledge about digital technologies acquired with higher education. Furthermore, digital knowledge may not necessarily increase linearly with education, as individuals may acquire most of it even before completing secondary education. In this case, the variable used in our study may be inadequate, as it assumes that digital knowledge increases with the level of education, potentially explaining its lack of significance. The dynamics of increasing digital knowledge among people are mainly influenced by the education system, which varies between countries. The limited studies that found a positive

connection between education levels and the use of digital technologies were conducted in specific countries, where the education system might differ from that of Slovenia and Croatia. Furthermore, the two mentioned countries also differ in their educational systems, as Croatian residents possess significantly more digital skills than those in Slovenia [37,38]. Therefore, our different findings suggest that digital technology usage is not influenced by education levels alone but may be associated with another factor, such as digital and information literacy. For instance, it has been found that both factors increase the use of digital technologies in the workplace [65].

We have found that early-stage entrepreneurs more frequently plan to introduce digital technologies in their sales operations, thereby rejecting hypothesis 4. Apparently, the lack of financial resources and inexperience are not significant barriers for early-stage entrepreneurs, as we assumed they would not plan to adopt digital technologies. In addition to the previously mentioned rationale that digital technologies are a source of new entrepreneurial ideas and innovations [15,40,66], which serve as catalysts for the emergence of new entrepreneurial ventures, digital technologies enable entrepreneurs to more easily find customers and strengthen their competitive position [15,67]. This is particularly important for early-stage entrepreneurs, who are, on average, younger than established entrepreneurs. Additionally, younger residents in Slovenia and Croatia possess more digital skills than older individuals [28], which can compensate for their relative lack of experience in implementing and using digital technologies in business processes.

Furthermore, we observe that Slovenian entrepreneurs more frequently plan to use digital technologies in sales, thus confirming hypothesis 5. As we presented earlier, Slovenia outperforms Croatia in all indicators that could affect the use of digital technologies in sales among entrepreneurs, except for digital literacy of the population. In Croatia, knowledge in the field of computing and informatics is integrated into the educational system from primary school onwards, whereas Slovenia is still planning to introduce these contents into its educational system. Slovenia also pays more attention to the digital training of SME employees and entrepreneurs through various digital vouchers, whereas in Croatia this system is less developed. Moreover, Slovenia has a higher proportion of IT professionals [37,38]. From the above, it is evident that Slovenia has so far focused more on targeted education, i.e., educating about digitalization for those who will need these skills. This means that, on average, the general population in Slovenia is less digitally literate, which could hinder the creation of entrepreneurial ideas since Slovenians lack the digital knowledge to recognize new entrepreneurial opportunities. In Slovenia, entrepreneurs can use digital vouchers only once they have established their businesses, meaning that they have already developed their business ideas and can complement their business models with acquired digital knowledge. On the other hand, potentially overlooked business ideas centered around digital technologies may occur if the population is not familiar with them beforehand.

Croatian entrepreneurs face high fixed service prices and poor coverage of more powerful connections. Both countries have issues primarily with providing powerful internet services in rural areas. Nevertheless, despite these issues, 10 percentage points more SMEs in Croatia generate at least 1% of their revenue from online sales compared to Slovenia. In 2020, 21% of SMEs in Croatia and 17% in Slovenia generated at least 1% of their revenue from online sales. In 2021, the COVID-19 crisis caused this figure to rise to 30% in Croatia, while it remained at 17% in Slovenia. This figure in the EU followed the same trend as that in Slovenia. Slovenia, in terms of this percentage, is an average country in the EU [44]. Considering the contradiction between these data and our findings, further investigation is needed to determine the specific factors in Croatia that have led to such a significant increase in the use of online sales among SMEs. Possible reasons for this could be specific measures by the Croatian government related to promoting digitalization in sales or restrictions on business operations during the COVID-19 crisis. Such growth in online sales is quite unusual in the EU and has only been achieved by Greece and Lithuania, besides Croatia, but all within a two-year period [44]. The high digital literacy

of the population may have contributed to this growth, enabling entrepreneurs to react quickly to changing circumstances. However, this is likely not the main reason, as Greece and Lithuania, which are comparable countries in terms of digital literacy, are among the worst-performing countries in this regard [28].

The findings of our research can also be commented on in connection with the increased use of digital technologies in sales in Croatia, suggesting that due to the wider prevalence of online sales in Croatia, fewer companies plan to use them. This is because there are fewer companies whose economic activity allows them to use online sales, whereas in Slovenia, there is a larger number of companies with the potential to use online sales. This raises the question of how many companies planning to use digital technologies in sales in the next six months will actually realize these plans.

We observe that motives for entrepreneurship are less important factors in the decision to adopt digitalization in sales, as only one variable, motive 1 (desire for change in the world), is statistically significant. Consequently, we reject hypotheses 7, 8 and 9. The motive for creating change in the world is the only one that increases the likelihood of digitization in sales, thereby confirming hypothesis 6. This means that entrepreneurs who founded their businesses with the intention of making a positive impact on the world are more likely to plan the use of digital technologies in sales.

The finding that the only significant motivator for embracing digitalization in sales is altruism is surprising. Previous literature has predominantly emphasized the importance of digitalization in terms of cost reduction [56], increasing income profit [15,57,68,69], productivity enhancement [70], and market expansion [33,34,71]. However, entrepreneurs pursuing income-related goals, which could be associated with the pursuit of these digitalization effects, do not perceive digitalization in sales as a crucial factor for achieving their objectives to increase income. Our findings demonstrate that digitalization is a vital component of sustainable business practices, as it is perceived as significant by entrepreneurs driven by altruism. This discovery highlights the necessity of exploring the effects of digitalization on business not only through the lens of a company's financial performance but also from a broader perspective, encompassing sustainable business practices.

The perceived significance of the motive of the desire for change in the world can be explained by the findings of Holzmann and Gregori [54], who state that digitalization plays a vital role for sustainable businesses in reaching new markets and communicating with customers, both of which rely on digital possibilities in sales. Furthermore, digital technologies have provided new momentum for sustainable entrepreneurship, such as models of the sharing economy, which reduce material consumption and related energy resources due to increased resource sharing [72]. Digitalization also facilitates the establishment of a circular economy business model, as information systems enable easier and more efficient tracking of materials and products, allowing for repairs and recycling outside the company that produced the item [72,73]. Moreover, social entrepreneurs have greater opportunities to achieve their basic goals, as digitalization not only expands their operating network but also enables easier access to financial resources for pursuing social objectives on a larger scale [74,75]. Digital technologies and related innovations also contribute to more effective control and reduction in air and water pollution [76]. They also promote more efficient energy use in various areas, such as waste processing, supply chain optimization, production, logistics, and energy-efficient housing, which subsequently reduces CO<sub>2</sub> emissions [76,77].

Furthermore, numerous case studies have demonstrated that digitalization plays a crucial role in achieving altruistic goals for businesses. For instance, an Uber-like application facilitates the organization of freight transport [78], an online platform allows sharing advice among social enterprises for successful operation [79], a digital solution encourages, educates, monitors, and facilitates the sale of carpets made by women in remote Indian villages [74], and a project in India enables lonely elderly people to educate underprivileged children in rural areas through digital technologies, with the elderly also learning digital skills in the process [75]. Gregori and Holzmann [54] also describe companies that developed an application suggesting the most sustainable routes, a web marketplace for

ecological farmers, and a platform through which customers remotely cultivate agricultural land, subsequently receiving the produce.

From all the listed examples, it is evident that digitalization offers numerous innovative possibilities for social enterprises to address social needs and challenges that would not be achievable without digital technologies. These examples also make it apparent that digitization plays a role in reaching the Sustainable Development Goals (SDGs). Digital technologies, especially within the economic sustainability domain, increase the income of impoverished communities, leading to a reduction in societal disparities. They also positively impact the social aspect of sustainability by improving education accessibility and addressing environmental issues through digital solutions that manage pollution. This suggests that digital technologies can be a significant factor in attaining SDGs and, consequently, in the sustainable transformation of both businesses and society. From the examples provided, it is indicated that, in many cases, it is difficult to separate digitalization in sales from digitalization in production or procurement, as many companies provide an integrated digital solution that serves both as a product and a means of sales. Given that digitalization is not a final technology but can be applied in new areas and ways through the development of artificial intelligence, connectivity technologies, and data processing and storage methods, entrepreneurs will have even more innovative approaches to achieving altruistic or other goals in the future.

## 6. Conclusions, Limitations and Future Research Directions

In the study, we discovered that altruistic motivation in entrepreneurship positively influences the likelihood of planning the use of digital technologies in sales, while we did not identify any significant connections for the remaining motives and demographic factors. We also found that early-stage entrepreneurs more frequently plan to use digital technologies in sales, and the same applies to Slovenian entrepreneurs compared to Croatian ones.

Significant content limitation is related to the dependent variable, which measures planned digitalization rather than actual implementation, which is more crucial for studying digitalization in entrepreneurship. This variable focuses only on a specific digital technology, thus not allowing for an exploration of the overall level of digitalization in companies. Additionally, the research is limited by using data from only two countries, making it impossible to generalize the obtained results. The study is also cross-sectional, and more reliable results could be obtained with a longitudinal study.

The findings of our study enable insights primarily for governments seeking to promote digitalization in the analyzed countries. The results suggest that digitalization incentives should focus primarily on established entrepreneurs, as they are less inclined to adopt digital technologies in sales. Additionally, our findings demonstrate that sustainable entrepreneurship can be promoted through digitalization. At the same time, they enable Croatian policymakers to identify opportunities for creating conditions for more extensive digitalization of companies based on a comparison with Slovenia.

Our research contributes to understanding the adoption of digital technologies in entrepreneurship, allowing future research to build on this acquired knowledge. Digital transformation is indeed the future of entrepreneurship, making it essential for research to follow this trend and enable a more efficient transition to digital business operations. Our study is also the first to examine the significance of entrepreneurial motives in the adoption of digitalization in business, providing a basis for further research into more specific aspects of individual entrepreneurial motives and digitalization. Moreover, our findings highlight that despite numerous studies, there are no uniform conclusions regarding the impact of demographic factors on business digitalization. This suggests that future research in this area may need to adopt different approaches to identify factors influencing diverse findings.

Therefore, in future research, conducting analyses based on data from multiple countries would be meaningful to validate our results and achieve generalizable findings. Future studies could also incorporate other explanatory variables in the model to create valid

predictive models. Another potential direction for further research is exploring the factors influencing actual sales digitization in entrepreneurship and identifying the factors explaining the difference between planned and realized digitalization.

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