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SME and digital transformation: a dream too far?

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Abstract
Digital transformation is a critical process given its correlation with innovation, new competitive advantages and ultimately with a superior business performance. However, digital transformation in SMEs is less investigated and only a small number of rather personal factors – such as owner-manager's gender, age and educational background – were identified to influence the digitalization process. This study investigates the extent to which SMEs have adopted new digital technologies and what other organizational factors are correlated with a higher level of digitalization. Data were collected from 249 organizations through a CATI survey at the beginning of COVID pandemic and were analysed using bivariate statistical methods. The results indicate that less than 2% of SMEs have a strong degree of digitalization, while almost 80% of them have a weak level. Additionally, we identified three factors which influence the degree of digitalization, namely: industry, company's age and type of product sold. Thus, professional services industry has a high degree of digitalization, while retail has the lowest one. Older companies and those which provide mostly services have recorded a higher level, while startups and enterprises which offer physical goods are the least digitized. Surprisingly, there is no correlation between the size of the firm or its organizational structure (traditional, fluid or mixed) and the degree of adoption of digital technologies. Although the digitalization is relatively weak, the pandemic was an accelerator of digital transformation that has forced companies to test and implement new business models.

1. Introduction

Digitalization is not only a buzzword nowadays but is a reality which businesses cannot ignore. Digitalization is the use of digital technologies to change a business model and provide new revenue and value-producing opportunities (Gartner, 2023). Today companies have at their disposal new technologies that can be integrated into business processes to generate value, such as: big data analytics and advanced algorithms, cloud computing, location detection technologies, advanced human-machine interfaces, IoT platforms, 3D printing, multilevel customer interaction and customer profiling, or augmented reality (Martínez-Caro, Cegarra-Navarro and Alfonso-Ruiz, 2020).

The problem is that digitalization is often confused with the concept of digital transformation. Although it is a term that has started to be widely used in business, there is no clear understanding of the concept (Salesforce, 2018). More than defining digital transformation, it is important to know what the benefits are and why companies should pursue it. Previous research has shown that the more prepared organizations are to adapt to digital transformation, the more likely they are to innovate and identify new competitive advantages. If organizations develop and strengthen their ability to innovate by digitizing their business

processes, this will contribute to increased performance and competitiveness in the market (Ferreira, Fernandes and Ferreira, 2019).

Beyond the advantages offered by digital technologies, the possible downsides should not be ignored, as they can have a negative impact both at individual, organizational or societal level (Berger et al., 2021). Lack of trust in digital tools - in terms of security, confidentiality and privacy - is among the most frequently mentioned disadvantages (Salesforce, 2018). In addition, potential negative effects can also be observed at the macroeconomic level and relate to the widening gap between developed and emerging economies about how much value they can create and capture (Berger *et al.*, 2021).

However, the disadvantages are outweighed by the advantages of digitalization. This is why it is important to know to what extent companies - and SMEs in particular - are prepared for the digital transformation process. SMEs are known to have erratic behaviour in information and communication technology investments and need support to integrate digital transformation into their business strategy (Ulas, 2019).

Previous research found out that digital technologies adoption rate is low among small enterprises even for technologies that are particularly relevant, such as cloud computing. The rate at which SMEs embrace digitalization is decidedly mixed (Li *et al.*, 2018).

According to other sources (Ferreira, Fernandes and Ferreira, 2019) older entrepreneurs, university graduates and female entrepreneur are more inclined to use digital tools and integrate them into business processes. In addition, digitalisation also depends on the sector of activity.

These findings were also highlighted by other research that explained the lagging behind of SMEs in terms of business model digitization due to SME owners and managers who are not prepared for this process (Straková, Talíř and Váchal, 2022). Interestingly, the COVID pandemic has accelerated the digitization process and forced a cultural change in small firms. Due to the social restrictions imposed during the pandemic, personal interaction was limited which forced managers and employees to use new digital technologies and digital workflows such as virtual meeting technologies. This forced adaptation gave them the opportunity to see the benefits of using such tools and to convince them to continue using them afterwards (Kraus *et al.*, 2020). Moreover, for some companies the pandemic not only did not paralyze their activity but stimulated it by using digital channels and exploiting new opportunities (Gavrila Gavrila and De Lucas Ancillo, 2022).

Even though SME digitalization has received some attention (Beatty, 2017) it is still under-researched. In addition, most of the identified factors influencing SME digitization are rather personal such as owner-manager's gender, age or educational background (Ferreira, Fernandes and Ferreira, 2019). However, there is research suggesting that digitization is more advanced in certain industries and requires other types of organizational structures. Given this gap, the purpose of this paper is to identify and highlight the correlation between various organizational factors and SME's digital transformation. Thus the research question is: what organizational factors influence the degree of digitalization of an SME?

The remainder of this article is organized as follows. The following section presents the literature review while section 3 describes the research methodology. In section 4 we will discuss our results and final section concludes the paper by presenting final remarks, limitations and future research directions.

2. Literature review

Nowadays, the terms digitization and digital transformation are used interchangeably, although they mean different things. The problem is that there is no consensus on the definition of digital transformation: for example, some authors (Reis *et al.*, 2018; Vial, 2019) consider that digital transformation implies the use of digital technologies to create new business

models, which change the company's value creation path. Others (Gartner, 2023) consider that this means digitization, not digital transformation.

In fact, the two concepts actually represent distinct stages of the digital transformation process (Verhoef *et al.*, 2021). The first stage - called digitization - involves the digitization of internal and external documentation processes, without changing value creation activities (for example the use of digital surveys, online forms for the ordering process, etc.) The second stage - called digitalization - is based on the adoption digital technologies to optimize existing business processes, such as communication, distribution or relationship management. The last stage is digital transformation and involves changing the entire business model by adopting digital technologies.

However digital transformation is far too distant for SMEs given the limited resources they have. Since the large majority of resource-constrained SMEs are not equipped for this level of complexity, we can talk about digitalization not digital transformation (Eller *et al.*, 2020). Beyond budget deficiencies, other obstacles to the digital transformation of SMEs are: lack of understanding of how digital technologies work, the benefits they can bring, poor connection problems, data security and privacy issues and last but not least, the lack of a skilled workforce. Currently, SMEs use these technologies in a limited way to collect information, to keep in touch with clients by email, for online banking services, for placing orders to partners or paying invoices and taxes (Ulas, 2019).

Nevertheless the benefits of a high degree of digitalization are significant. Previous research demonstrates that digital transformation greatly improves the performance of the organization by reducing costs, increasing revenues, improving efficiency and encouraging innovation (Peng and Tao, 2022). In fact, this is the mechanism through which digital technologies ultimately lead to increased performance: the more advanced a company is on the digital transformation path, the more it strengthens its ability to innovate and identify new competitive advantages ahead of the competitors, which leads to superior performance (Ferreira, Fernandes and Ferreira, 2019). This mechanism was highlighted in certain industries, such as manufacturing (Zhao *et al.*, 2022), but it is strongest in digital related service industries (Li *et al.*, 2023). However, the simple adoption of digital technologies does not automatically improve the company's performance, unless the business model is redesigned. The problem is that SMEs have limited time and resources to experiment with new business models (Bouwman, Nikou and de Reuver, 2019). Moreover, the effect of implementing digital technologies differs from one company to another, depending on the technical background and existing infrastructure. That is why it is necessary to take into account the cost effectiveness ratio (Kilimis *et al.*, 2019) when implementing a new digital technology.

For an organization, adopting a new technology is not enough, the question is how it will be exploited? Investments made in new digital technologies must be translated into value activities such as generating new knowledge for innovation, facilitating decision making, improving relationship management in order to be effective. After all, digital transformation is about strategizing as it is about technology (Volberda *et al.*, 2021). Which means that a company needs both a strategic orientation that integrates these technologies into value creation processes (Kindermann *et al.*, 2021) and a digitalization capability that supports all value chain activities. For example, the ability to use artificial intelligence, machine learning and marketing analytics have a positive impact on logistic performance, sales process and marketing activities (Ritter and Pedersen, 2020).

Other authors distinguish more than one ability. For example, some (Verhoef *et al.*, 2021) consider that a diversified set of capabilities is needed such as: digital agility – to sense and exploit market opportunities, digital networking – to co-create value with digitally connected organizations and big data analytics – to analyze and utilize big data for decision making.

Digitalization and digital transformation can only be achieved if employees work together in a different way, by collaborating and breaking down functional silos (Holmström, 2022) to learn from one another. A flexible organizational structure could be: a) separate business units from the headquarters – a solution preferred by incumbents, b) agile organizational forms or c) digital functional areas – with IT function playing a proactive role in supporting digital value creation (Verhoef *et al.*, 2021).

Given the human, financial and organizational challenges faced by SMEs (Kraft, Lindeque and Peter, 2022), a valid question is to what degree should these firms transform digitally?

The COVID-19 pandemic has accelerated both consumers' habits changes and organizations' innovation and digital transformation, breaking with the past and leading to new business models (Gavrila Gavrila and De Lucas Ancillo, 2022). Moreover, it is considered that companies that managed to survive and prosper during the pandemic by digitalizing their processes, will serve as leadership models for the next generations of businesses (de Lucas Ancillo and Gavrila Gavrila, 2023).

3. Research methodology

As we have mentioned earlier, the goal of this research was to examine organizational factors which leads SMEs to digitalization. To achieve this goal, we conducted a survey between June-July 2020 during the state of alert generated by COVID-19 pandemic in Romania. Due to social distancing restrictions, the quantitative data was collected using a CATI method, and the questionnaire was reviewed by three university academics and pre-tested. The questionnaire was administered to 249 Romanian SMEs (between 1 and 249 employees) from different industries.

We structured the sample by quota, to ensure that it is representative in terms of company's size and economic activity. We have selected businesses from all industries: Wholesale and retail trade, Services (real estate, leasing, administrative), Professional services (legal, accounting, management, architecture, engineering), Manufacturing, Accommodation and food service activities, Transport and storage, and Construction (see Table 1). Additionally, we have included also Professional/business associations due to the fact that they offer paid services to their members therefore it may be considered an enterprise activity (European Commission, 2023). The respondents were key informants such as business owners and/or top management team members.

Table 1. Characteristics of respondents

Industry	Frequency
Wholesale and retail trade	101
Services (tourism, real estate, leasing, administrative etc.)	27
Professional/business associations	26
Production	25
Accomodation and food service activities	24
Professional services (legal, accounting,management, architecture, engineering etc)	17
Construction	13
Transport and storage	12
Education	4
TOTAL	*249*

To identify which organizational factors influence digitalization, we have decided to test the followings: the industry in which the organization operates, company's tenure in the market

and number of employees. Another factor is related to the organizational structure, as the digitalization process requires new arrangements. It is known that traditional structures, organized hierarchically on management levels with a chain of command from top to bottom, are ineffective in the process of digital transformation. Therefore, flexible structures are needed based on autonomous teams in which employees have the freedom to get involved in various tasks without being assigned functional roles. Consequently, we will test to what extent the organizational structure of SMEs - traditional, fluid or mixed - can facilitate digital transformation. In addition, we also tested the type of products offered (goods, services, both of them) to see if there is a connection with digitalization.

The degree of digitalization was measured using a 7-points rating scale, were 1 is very low, and 7 is very high.

After data cleaning was performed to eliminate errors and identify outliers, data was analyzed using IBM SPSS® Statistics and. For some types of scale, the data were transformed (converted from nominal variables to metric variables and vice versa), and some new variables were calculated. During the data analysis process we have used basic statistical methods, (such as frequencies distribution, mean, standard deviation), crosstabs and contingency coefficient.

4. Results and discussions

Regarding respondents' profile out of 249 organizations, 88.4% are micro-enterprises (0-9 employees), 10% are small enterprises (10-49 employees) and the remaining 1.6% are medium-sized enterprises (50 -249 employees).

Table 2. Distribution by company's size

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0-9 employees	220	88.4	88.4	88.4
	10-49 employees	25	10.0	10.0	98.4
	50-249 employees	4	1.6	1.6	100.0
	Total	249	100.0	100.0	

Most companies (34.5%) have been in the market for 4-9 years, 30.% are between 10-20 years (30.5%), 23.7% are start-ups (0-3 years) while 11.2% are "mature" (over 20 years old).

Table 3. Distribution by company's age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0-3 years	59	23.7	23.7	23.7
	10-20 years	76	30.5	30.5	54.2
	4-9 years	86	34.5	34.5	88.8
	Over 20 years	28	11.2	11.2	100.0
	Total	249	100.0	100.0	

An interesting finding was about the way in which SMEs are organized. Thus, although a significant percentage (38%) declares that the activity is carried out in a traditional way with specialized activities organized by departments (production, accounting, human resources, etc.) an even higher percentage (43%) operates with a mixed structure. Some activities are performed in specialized departments, while others are carried out fluidly depending on needs. Almost 1 in 5 respondents indicate that company's structure is flexible because employees are organized on projects in which people with different skills work toghether (see Table 4):

Table 4. Distribution by organizational structure

	Freq	%	Valid %	Cumulative %
Flexible organization structure	47	18.9	18.9	18.9
Mixed organization structure	108	43.4	43.4	62.2
Traditional organization structure	94	37.8	37.8	100.0
Total	249	100.0	100.0	

Considering the type of market addressed (consumer, business or mixed), we found out that SMEs serve all types of market. However, there is a statistically significant difference between the type of product offered and the way in which the activity is organized. Thus, 70% of the companies that sell physical goods prefer a traditional organizational structure, while 25% a mixed one. Unlike those companies, the majority of enterprises that sell services prefer a mixed organizational structure.

Digitalization is measured by the degree of adoption of new digital technologies in business processes such as digital platforms, artificial intelligence, virtual reality, blockchain, Internet of Things, robotization of process automation.

Regarding the level of digitalization (from 1=very low, to 7=very high), we found out that the mean is 2.85 and the standard deviation 1.088. The distribution of the answers is presented in the following table:

Table 5. Level of digitalization

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	21	8.4	8.4	8.4
	2	74	29.7	29.7	38.2
	3	98	39.4	39.4	77.5
	4	39	15.7	15.7	93.2
	5	13	5.2	5.2	98.4
	6	2	.8	.8	99.2
	7	2	.8	.8	100.0
	Total	249	100.0	100.0	

Most respondents (39.4%) rated at 3 the level of adoption of digital technologies in their firm, 29.7% estimated at 2, 15.7% rated 4, 8.4% rated 1 and 5.2% rated 5. Very few respondents gave scores of 6 or 7.

To test if there is a link between the degree of digitalization and variables such as industry, company's age, size, organizational structure and type of product offered, a transformation of the variable from a metric to a categorical one was carried out. Thus, taking into account the fact that the average is 2.85, we decided that those who gave scores of 1 and 2 will form the low digitalization category, those with a score of 3 - medium digitalization and those with scores of 4, 5, 6 and 7 - high digitization. The distribution of respondents according to the field of activity is presented below:

Table 6. Industry and level of digitalization

		Other services	Associations	Trade	Production	Professional services	Total
Digitalization	High	16	8	16	5	11	56
	Low	26	7	49	11	2	95
	Medium	35	11	36	12	4	98
Total		77	26	101	28	17	249

We find that 49% of firms in trade have a low level of digitization, while 65% of firms offering professional services have a high level. Medium level of digitalization can be found in in manufacturing, other services and associations. We tested the relationship between the two variables and found that there is a medium but statistically significant association between the two variables (contingency coefficient = 0.308, p-value 0.001).

We also tested the level of adoption of digital technologies and company's age. We found that start-ups have low digitalization, firms aged 4-9 years and 10-20 years have a medium level and mature companies with more than 20 years in the market have a high digitalization. Again, the correlation between these two variables - degree of digitalization and age - is medium but statistically significant (contingency coefficient 0.305, p-value 0.000).

Table 7. Age and level of digitalization

		0-3 years	10-20 years	4-9 years	Over 20 years	Total
Digitalization	High	10	11	23	12	56
	Low	35	27	25	8	95
	Medium	14	38	38	8	98
Total		59	76	86	28	249

Considering company's size and digitalization, it was found that there is no association between the two variables. There is also no association between the degree of digitalization and the organizational structure of the firm.

However, there is a partial association between the type of product sold and the level of digitalisation. Thus, 62% of companies that sell physical goods have a low level of digitalisation while firms offering services have - on the other hand - a medium level of digitalisation. The link between the two variables is weak but statistically significant. However, there is no association between those with a mixed offering (both physical goods and services) and the degree of digitalisation.

5. Conclusion

This study aimed to find out the level of digitalization of SMEs and what are the organizational factors which influence the adoption of digital technologies. As expected, an insignificant percentage of less than 2% of respondents affirm that the level of adoption of digital technologies (such as digital platforms, artificial intelligence, virtual reality, blockchain, Internet of Things, robotic process automation) is high while almost 80% declared that it is medium or low.

Considering the association between industry and business digitalization, our research confirms previous results (A4), namely, some industries are more digitized than others. Thus, companies offering professional services (consulting services, advertising, market research design, etc.) have a high degree of digitalization while firms in commerce have the lowest level. Manufacturing, construction, tourism and transport companies have a medium level of digitalization. Although it is surprising that retailers have the lowest level of digitalization, a possible explanation could be the reluctance of their own customers to use these technologies, preferring direct and personalized contact rather than robots, artificial intelligence and virtual reality.

On the other hand, digitalization correlates with company age, with companies over 20 years old having the highest adoption rate and start-ups the lowest. This result is somewhat unexpected, given that our assumption was that start-ups would be more agile and innovative

than older companies. One possible explanation is the experience that mature firms have: with a good knowledge of the market as well as the industry and competitors, they can afford to invest only in useful technologies, therefore the risk is much lower for them.

However, no correlation was found between firm size and degree of digitalization. We expected that small firms - given their limited resources compared to medium or large firms - would have a lower degree of digitization. It seems that it is not resources that explain the adoption of new technologies but rather the market experience.

Interestingly, there is no connection between the organizational structure and company's digitalization. This result contradicts previous research (A1) which suggested that digital transformation requires a much more fluid organizational structure than the traditional one based on specialized functions and departments.

In terms of product types, firms selling physical goods have a low level of digitalization while those providing services have a medium level of digitalization. Although the production of physical goods offers opportunities for automation and robotization, it seems that firms offering services are more likely to take advantage of new technologies.

The present study, however, is only a descriptive research that highlights organizational factors that are correlated with the degree of digitalization of SMEs. However, it would be interesting to investigate to what extent these correlations are maintained in the case of large companies.

In addition, the research was conducted in the first year of the COVID pandemic. Given the role of the pandemic as an accelerator of the digital transformation process, it would be useful to conduct a longitudinal research and find out how things have evolved in the last years.

Acknowledgments

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Investigating Stakeholder Requirements for Designing an Effective Online Research Community Platform

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Abstract
Online research communities offer collaborative environments where organizations can interact with consumers in real-time to gain insights, build innovation projects, and access relevant audiences passionate about providing impactful responses. This research paper aims to uncover key insights from stakeholders for designing an online research community platform. To achieve this objective, the study conducted research among relevant stakeholders, including market research agencies, advertising agencies, professional associations, researchers, private marketing specialists, and future members/participants in the online community as respondents in the studies conducted. The specific objectives were to identify stakeholders' needs for tools and technical solutions to design an online research community platform, pinpoint specific needs for online communities, and identify desired functionalities regarding the online community platform. The ideal online community platform should offer various functionalities to cater to different users' needs. The platform must be user-friendly, with intuitive and easy-to-understand features for users at different experience levels. A pleasing visual design that is simple and airy with clear identification of each button/element on the page is necessary to create a perfect environment for interaction with participants. Overall, the findings from this research study provide valuable insights into stakeholders' needs for an online research community platform. By identifying these needs and desired functionalities, the study guides the development of an effective and user-friendly online research community platform that can compete with foreign platforms, bring together research agencies, interested brands/companies, and members-consumers, whose input is valuable and crucial in today's business world.

Keywords: online research community platform, qualitative research, stakeholder insights, marketing, virtual communities.

JEL classification: M31.

1. Introduction

The development of technology and communication platforms has led to the emergence of online knowledge communities. These communities involve individuals sharing information for different reasons, such as helping others, a sense of belonging, and a belief in generalized reciprocity (Tausczik & Huang, 2020; Chan & Li, 2010). By using collaborative filtering, these platforms transcend geographical and social boundaries, leading to a change in the way interactions occur and contributing to the accuracy and completeness of shared information.

The scope of online knowledge communities is diverse, ranging from personal subjects like medical conditions (Bellander & Landqvist, 2018) to professional fields such as software engineering (Aniche et al., 2018). The shared knowledge can be general or specialized, factual or based on personal experience, leading to a broad range of expertise (Deng, Tong & Fu, 2018). Online knowledge communities are virtual spaces where individuals pose and answer questions through asynchronous, text-based, computer-mediated communication (Hwang, Singh & Argote, 2015). These communities are characterized by their ability to transcend geographical and social boundaries and the presence of many unknown users. The dynamics of these online communities change constantly as users join and leave, and their interests change (Majchrzak, Faraj, Kane & Azad, 2013; Sieckenius de Souza & Preece, 2004). The widespread popularity of online knowledge communities has led to their proliferation on various communication platforms, including newsgroups, newsletters, mailing lists, online forums (Gheorghe & Liao, 2012), Q&A sites, and common interest groups on social networking sites (Yan, Wang, Chen & Zhang, 2016).

Bringing people with similar characteristics together in a group and studying the differences in behavior between different groups is useful for gaining a deeper understanding of different groups and obtaining meaningful commercial guidance. Customer segmentation can be done according to various criteria, based on biological and social attributes such as sex, age, interests, marital status, and place of residence, to study their behavior regarding different products, markets, or services (Kraft & Weber, 2012).

The influence of online knowledge communities is not limited to individuals but extends to organizations and society. The information gathered from these communities can influence decision-making, leading to a potential impact on society. As a result, these communities have become a valuable source of knowledge and information for researchers, practitioners, and the general public (Cole, Watkins & Kleine, 2016; Zagalsky et al., 2018).

In recent years, many online communities have been created at the international level. Some of the most representative such communities at the international level are (Insight Platforms, 2023): Recollective, CMNTY, PlushForums, incling, FlexMR, Liveminds, QualBoard, Further, Collabito, VisionsLive, invoke, Together, aha Insights Technology, Focusson, FocusVision InterVu, GroupQuality, Hatchtank, iResearch etc.

2. Literature review

Research agencies are resorting to increasingly innovative methods to listen to the voice of consumers, interact with them, and the penetration of the internet offers countless new opportunities. For research service agencies, the online research community is a "next-generation" service that they can offer to clients (Serrano et al., 2017). Online communities are indeed a research tool that has been increasingly talked about in recent years. These mechanisms are closely linked to the penetration of the internet and people's appetite to be there. It is very important for research agencies to discover ways to access consumers, and to find relevant ways to listen to their voice. For example, it can be observed that on the metro, about 84% of the passengers use their phones, surf the internet, read news, enter social networks, and so on (Liang & Hwang, 2016). Therefore, to better understand them, it is necessary to identify the spaces where it is relevant to talk to them, and the online or digital zone has grown very. Another important aspect is that a target group of consumers is found online, targeted by many of the agency's clients: people between 25-50 years old from urban areas.

An important advantage is that people in the respective community feel comfortable in this space and therefore create a lot of content. There is a certain freedom to intervene on such a platform, as it is possible to interact with consumers at various times of the day depending

on what the research companies want to find out or observe about them, an important advantage especially when studying several aspects of their lifestyle.

In a changing society, proactivity is desired rather than reactivity. Focusing on the consumer is the trend from which the idea of a community in business originated. The resulting business benefits include cost optimization, especially if it is a long-term community that identifies both needs and new ways to test products (Xie, Wang & Zhang, 2023). Another benefit for the organizations is that they receive real-time feedback on the products and services they offer, directly and unfiltered by other sources. Manufacturers can validate or invalidate hypotheses they have at any time and investigate situations that arise, among other things.

The rapid pace of change in the world and the need for quick results are pressing. When a platform is available with access to already known individuals, the recruitment effort is eliminated, and the research need can be resolved much more rapidly, providing practically real-time results. Some objectives can be met with answers from one day to the next. This means that the budget must be optimized, and the developed community must be kept alive. Results can be seen and used, so companies can bring things to their consumers much faster than if they had to wait to see them in the market on a large scale. It is a significant advantage to be able to anticipate things before competitors do (Robb, 2021). Adaptation to the consumer is also very important, and the best way to understand people is to give them the freedom to speak about their experiences (Bond, 2020). Such a community provides much more possibility to see the consumer from all angles and understand their experiences. Another advantage of the brand is that those consumers work for it and know that they need to be attentive because they are in a community, making members proactive for the company/brand. Brand advocates are also created, who can be found in other online structures and everyday life.

Creating a community does not happen overnight; it takes a certain amount of time to create a sense of belonging, a time necessary for people to get to know each other, which can take about a month. Creating a sense of community spirit and obtaining relevant data takes about three months. As the community is better developed and maintained, the desired results for brands begin to appear.

Members of such online research communities can express themselves, voice their opinions, and receive attention. They have access to a relevant platform to express their opinions, which is somewhat rewarding. Nothing that members say within the platform reaches the public or the internet, as the platform is secure. People have the need to feel valued, which is why they are motivated to be members of such communities. Another way in which research agencies can motivate community members is through gamification. Gamification is the application of game design elements and game principles in non-game contexts. It can also be defined as a set of activities and problem-solving processes using or applying game-like characteristics (Coursera.org, 2023).

Participants on online research platforms need to be challenged and respond well to game-like stimuli. Multiple levels can be established based on community involvement, and interest should be sparked so that platform members want to move from one level to another. Additionally, a micro-society is formed on the platform, allowing participants to create relationships, express their points of view, and become opinion leaders on various topics.

Online and offline research methods (face-to-face research) are complementary. This virtual space often provides greater freedom, and people feel more comfortable communicating there, leading to more openness. Another crucial aspect is engagement. When considering a research community versus a social community or any other online communication space, engagement is what makes the difference. This includes the way people are brought into the story, how they stay there, and how they participate in or even build their own story. Regarding participation and collaboration with clients and brands, engagement is focused on turning

respondents into members who work together with the companies. Brand values must be integrated into the platform, along with objectives and more. Engagement means looking at consumers as members. The difference between a consumer and a member is that the member has the freedom to advise the brand and is encouraged to do so, feeling that they are part of the brand, rather than just consuming the product. A sense of belonging to a group where one is valuable and has power is created. Their feedback is relevant, and true engagement is established between members and the platform that helped them be there.

It is recommended that companies investigate what consumers are saying beyond words in online communities. It is very useful to use projective techniques and more to find out what lies behind the consumers' words. Furthermore, what sets a research community apart from a social one is the correlation of the recruited profile with what is obtained from Google, for example. In the case of a research community, there is an aggregate of information. Another important difference between a social community and a research community is its purpose, which translates into a multitude of other things. The purpose of a research community is to achieve the client's business objectives, whether they reside in innovation, testing certain concepts, and so on. In a social community, the brand needs to become visible and interact on certain specific issues that mostly arise as they go along.

Unlike other countries, in Romania, there are no online research communities and platforms developed 100% in Romania. Some of the research agencies that have their parent company in another country, but are also present in the Romanian market (e.g. GFK or Ipsos) use the developed international platform. Other local agencies have entered into partnerships with international platforms and can thus offer such research to their clients.

Other agencies in Romania have developed platforms, but in the form of forums that have basic functionalities: only for discussions/chat or where different launches/events are announced, and they can be used more as tools in the human resources sphere rather than in the research sphere where engagement and the creation of a sense of belonging are needed.

We have highlighted above the importance of online research communities, and we have developed a concept for an online community to serve the Romanian market, called *ASECOMP Communities*, which is part of a bigger research project (POC) financed through a grant from the European Funds. Our online research community platform will allow participants to be recruited by research agencies and filtered according to criteria that the agency and client consider important, such as age, income, consumption habits, etc., as is done in traditional research. To build a user-friendly, effective, and engaging platform, and that caters to the needs of its users we had to conduct qualitative research among the stakeholders that would be interested in using such a platform. The ASECOMP platform also includes modules such as: Marketplace (Constantinescu et al., 2021), Market Research (Ioniță, Olaleye & Onișor, 2020) and Events.

3. Research Methodology

The main objective of this effort was to conduct a research study among relevant stakeholders (market research agencies, advertising agencies, professional associations, researchers, private marketing specialists, and future members/participants in the online community) and identify their needs for tools and technical solutions to design an online research community platform. Specific objectives include identifying the needs of relevant stakeholders to participate in online communities, pinpointing specific needs they have for these online communities, and identifying desired functionalities from the online community platform.

The research utilized the *selective survey method*, and the exploratory research technique employed was the *semi-structured in-depth interview*, based on a *conversation guide* (Pop, 2001, pp. 86-87; Cătoiu et al., 2002, p. 207).

Regarding the *structure of the sample*, participant recruitment, and information gathering, the qualitative research undertaken had an exploratory character, aiming to capture stakeholders' opinions about the designs of an online research community platform for the Romanian market. The *snowball sampling method* was used to identify respondents from the relevant stakeholders. On one side, we identified a representative of a market research agency, a representative from an advertising agency, one from a professional association, a researcher, a private marketing specialist, and three persons interested to be participants and respondents in the online studies conducted on the platform. They, in turn, indicated other people, reaching a total of 18 persons who agreed to answer the questions. To ensure study homogeneity, a balanced mix of specialists from the stakeholder list was ensured.

The interviews took place in August and September 2020, using Zoom platform, in Romanian, each having an average duration of 30 minutes. In the following section, the results obtained from analyzing the responses of the 18 respondents will be presented.

4. Main findings

Designing an online research community platform is a complex task that requires careful consideration of user needs and preferences. Expectations from user testing and evaluation can help to inform the design process and ensure that the platform meets the needs of its intended users.

After analyzing the results of the in-depth interviews, the ***key insights of the stakeholders*** interested to be part of an online community platform were:

- The ideal online community is first and foremost "*user-friendly*". Therefore, the software should be designed and developed to be as *intuitive*, *easy to understand*, and *easy to use* as possible, regardless of users' level of experience. In addition to this aspect of functionality and design, the ideal online community must create the *perfect environment for interaction with participants*, encouraging them to access the activities posted by moderators with pleasure and ease.
- To have *a wide range of functionalities*, so that the software allows for various types of studies, both *quantitative* and *qualitative*;
- The *Menu* page to have multiple functionalities:
    - *Home* page (containing all information related to how the respective community operates, participation rules, community purpose, and duration of the study);
    - *Activities* page (where the moderator periodically launches new questions/tasks);
    - *Forum* page (where participants can interact with each other and address topics of interest outside those set by the moderator);
    - *Chat* page (where participants can interact with the moderators).
- *Social stimulation*. The software should offer a "friendly" experience for users so that they are motivated to share their opinions and feelings more openly. The main benefit is to lead to the desired results. Additionally, implementing a button through which participants can earn various bonuses in points or other gifts captures the interest of respondents and motivates them to dedicate much more to the project;
- The online community should be able to *generate reports* that experts can access/download based on the specific needs of the project. This feature will facilitate the work of the analyst and also reduce the time allocated to analysis;

- The ability to *download responses* provided by participants in pdf, word, ppt, and excel format (without editing rights), for the analysis stage;
- Moderators should have *access to general information about participants*, such as status, response rate, quality of responses, etc.;
- The ability to *upload multimedia* (audio, video, photo content);
- The software should be available both on the *browser* and on the *phone* (application available on Android and IOS).
- *Visual customization capabilities*;
- The ability to *archive the studies*;
- *Private chat* or recruitment options for communication with participants (additional information, assistance, other questions);
- *A feedback section* (for improving the online community) that can be accessed by both organizations/researchers and participants;
- The ability to address *different types of questions*: open/closed, single/multiple answer, polls, boards, journals, ethnographies;
- The use of innovative and effective *motivational mechanisms* (e.g. point allocation system per question/activity);
- The *design* should be *visually pleasing*, *airy*, and *simple*, with each button/element on the page easily identifiable by the user.
- The *layout* should be customized according to the specifications/peculiarities of the clients/organizations/researchers.

The platform should have *four types of accounts*, namely the *Owner* account, responsible for providing technical support, the *Administrator/Moderator* account, responsible for moderating the community and communicating with respondents, the *Respondent* account, which allows participants to post responses to activities posted by the moderator in the Activities section, as well as in the Forum/Chat section, and the *Observer* account, which can browse activities and responses posted by moderators and participants, but does not have the same rights as moderators or respondents.

5. Research Limits and Future Research

The present qualitative research provides valuable insights into the preferences and behavior of online research community users, helping developers to design more effective platforms that promote knowledge exchange and collaboration. However, it is important to acknowledge some limitations.

The study's sample size was limited, and therefore the findings may not be statistically representative of the wider online research community market. As such, future research could involve a larger and more diverse sample to further validate the study's results.

Future research could include a quantitative study, in which more stakeholders participate in a usability test for the ASECOMP Online Communities platform. Lastly, the study was conducted with participants primarily from a single geographic location, and future research could aim to include participants from diverse cultural backgrounds to investigate potential differences in online research community usage and needs across different regions.

6. Discussions and Conclusions

Online communities enable the development of collaborative environments where organizations can interact with consumers in real-time. This approach allows for the building of insights, innovation projects, and gaining influence by accessing relevant audiences who are passionate about providing impactful responses. The platform needs to offer the latest online technologies, including webcam interviews, live chat, discussion groups, or blogs, to transform

static, linear research into an interactive and immersive experience. By incorporating a robust suite of qualitative and quantitative research tools, communities can be used to cover specific research objectives, from agile testing, overnight to iterative learning processes in the long term.

An online research community and the platform where this community gathers represent a cost-effective long-term instrument. The start-up phase represents an investment that is amortized over time and is a significant effort for companies because it is necessary to understand the consumer in a 360-degree view, to create engagement – it is different from talking to them on Facebook.

The ideal online community platform should offer a range of functionalities to cater to the needs of different users. These may include visual editing, archiving of studies, private chat rooms for communication with participants, a feedback section for both clients and participants, and the ability to ask various types of questions, such as open-ended, closed-ended, with single or multiple responses, polls, bulletin boards, journals, and ethnographies. Innovative and efficient motivational mechanisms, such as point allocation systems, should also be implemented to encourage participation.

To ensure a user-friendly experience, the software must be designed and developed with intuitive and easy-to-understand features, regardless of the user's level of experience. Additionally, the ideal online community should create a perfect environment for interaction with participants, encouraging them to access activities posted by moderators with pleasure and ease. A pleasing visual design that is simple and airy with clear identification of each button/element on the page is necessary.

The platform should allow for quick connection via both browser and mobile application. Other functionalities may include storing participant responses in folders based on specific settings, posting various types of questions, creating online discussion groups or interviews directly from the platform, posting audio-video content/pictures/articles from a phone/laptop or the internet, and having a digital whiteboard function. Customization of the layout based on client specifications/particularities is also essential.

Such a platform is not a cheap tool, especially if it is a brand community that happens in the long term. The company needs to evaluate the volume of research they want to conduct and answer questions such as: What are my research interests this year? What are my objectives? What are the issues I want to address? Once the answers are identified, it needs to be considered in perspective, looking at the established strategy and evaluating whether such a tool brings the brand the necessary return on investment. What is truly important is to apply it when and for what is necessary, as obviously, some benefits and opportunities come with such an online community. Understanding people and seeing them practically how they manifest is fabulous - hence the value brought by creating an online community.

One thing is certain, especially after the pandemic period: we cannot oppose what technology means, it is something we need to get used to and the faster we understand this, the better we can take advantage of it both in the present and the future, even in the short term, but especially in the long term.

Considering Romania's weak presence on the map of online research communities, the development of a tool that can compete with foreign platforms, a tool that can bring together research agencies, interested brands/companies, and members-consumers whose input is so valuable and crucial in today's business world is undoubtedly necessary and urgent.

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Using the Right Content on Social Media to Enhance Consumer Engagement

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Abstract
Online marketing covers a significant portion of what a brand's promotion strategy means today. Whether the focus is on the organic side of online marketing or the paid one, promotional efforts must be viewed with the same level of importance in building an effective campaign that generates controllable results. The choice of online promotion channels, where a company's potential customers spend their time, as well as the differentiation in types of content that can be uploaded play a significant role in determining consumers to actively engage with the respective brand. Authors from the specialized literature have conflicting opinions regarding the effectiveness of the various types of content uploaded by brands on their social media pages. Thus, there is the need of evaluating the effectiveness of the main existing content categories (informational, remunerative, entertainment and relational), as well as identifying that content that determines certain behaviors among online users, respectively changes in their level of interaction with a brand. To solve such a decision-making problem, we have conducted two direct researches. The first was a marketing experiment, on the Facebook and Instagram pages of a coffee shop, in order to determine the level of engagement users have based on the content type. We have made 12 social media posts, based on content type, length of the description text, the day of the week and the period of the day in which they were made public. The second research was a survey among the social media users following the coffee shop accounts, in order to evaluate the consumer's opinion about the above-mentioned types of content. Comparing the results of the 2 researches, we have identified both correlations and certain existing contradictions between consumers' actual behavior in the online environment and the preferences they state regarding the posts with which they are most likely to interact.

1. Introduction

The process of digitization has accelerated significantly over time, particularly in the context of the Covid-19 pandemic, when all the activities went online. Although the time spent browsing the various channels available on the Internet has increased, this doesn't guarantee that users will interact more with the various types of content to which they are exposed. Due to the huge flow of information available in online channels, each of us have established certain criteria by which we filter information that is likely to attract our attention and interest about that topic, and otherwise we behave in a passive way.

Therefore, the present study aims to analyze the level of effectiveness of informational, entartainment and relational types of content discussed by different authors in the literature, in

order to identify, in the case of each of the two social networks, Facebook and Instagram, the category of content that attracts the highest engagement rate among the specialty coffee shop followers. The study was firstly based on a marketing experiment to observe the actual behavior of online users, then a quantitative research was conducted using the online survey method, in order to be able to compare the actual behaviour of users with what they say would actually attract their attention. Given that the level of consumer trust is based on information about coffee assortment, country of origin, green bean processing methods, etc., the decision problem arises as to the impact of informational content versus entertaining and relational content on both social media platforms. Therefore, this study was necessary both to identify the most effective type of content on each social network in order to improve Garage Cafe's communication strategy, and to test multiple factors that could contribute to the success of each type of content, since performances cannot be attributed to a single communication effort, even a social media platform.

2. Content Marketing on Social Media
2.1. Online marketing
The Covid-19 pandemic has had a significant impact on the way companies perceive the online environment, with many implications for their level of adaptation in line with the increased time consumers spend on various online channels. Junusi (2020, p.16) argues that some changes in the online environment are driven by the emergence of pandemics as consumer behavior changes, along with the actions taken by brands to keep up and adapt to digital marketing. According to Albattat (2020, p.95), online marketing continues to have a strong impact on how individuals communicate, but also how they select the information they come into contact with, which can influence the decision to purchase a product or service. In the literature, there are a number of different perspectives on the concept of "online marketing". Jucha et al. (2020, p.368) define online marketing as the totality of activities carried out via the Internet with the aim of selling goods or services offered by a company. Online marketing also provides brand value and helps increase brand awareness (Sharma, 2011, p.207).

Kotler and Armstrong (2017, p.78) define the marketing mix as the combination of tactical tools that a company uses to build and strengthen its favorable position in the market in which it operates. McCarthy's (1960) 4Ps model of the marketing mix, consisting of product, price, promotion, and distribution, has effectively evolved into Booms and Bitner's (1981) 7-component model, so that the model can be used for a variety of purposes beyond the service area for which it was originally designed. The online product refers to the adaptation of the physical characteristics of products in a digital space, so the following can be included in this category: software, content uploaded to various online platforms, or services provided (Engaiodigital, n.d.). According to Kotler and Armstrong (2017, p.308), price refers to both the amount of money consumers pay to purchase a product or service and the value they give up to obtain the benefits of using the purchased product or service. Online promotion involves the use of communication techniques that exist in the online environment to get the message across to the target audience (Engaiodigital, n.d.). Distribution is the way in which users or consumers access the products or services offered by a company using the various channels available online (McGruer, 2020, p.334). Ramadani (2020, p.146) defines process as the set of actions taken to provide value and satisfaction to consumers so that they return and purchase online. According to McGruer (2020, p.335), the "people" component includes customer experience, service, and customer support. Physical evidence that can appear online includes how the company's website is displayed and increasing brand awareness through multiple channels to expand the consumer experience (Engaiodigital, n.d.).

Albattat (2020, p.95) argues that a company's performance depends both on how it interacts with its customers, how it takes into account the feedback and complaints it receives from them, and how quickly it communicates information about its products and services, which is only possible by adopting online marketing strategies. A whole new landscape of opportunities to grow and enhance a company's image can be created through online marketing.

2.2. Online promotion

From Booms and Bitner's (1981) picture of the 7Ps of the online marketing mix, online promotion plays a key role in attracting potential consumers and increasing interest in a brand's products and services because of the ease with which marketers can reach an increasing number of people who spend time on the internet. Warokka et al. (2020, p.1187) define online promotion as a strategy by which a company can build and maintain lasting relationships with its customers by initiating concrete and effective activities to facilitate the exchange of ideas, products or services. Moreover, Hossain and Rahman (2017, p.6) argue that online promotion is a profitable choice because the target audience voluntarily wants to obtain information about the company's business and the costs associated with this strategy are relatively low. Businesses have more ways to reach and engage consumers when it comes to online promotion. After reviewing several classifications of online promotion tools in the literature, the classification of Doza and Vanova (2020, p.22) was chosen to be presented. They believe that the most commonly used communication tools are: search engine marketing (SEM), search engine optimization (SEO), cost per click (PPC), social media, display network, email marketing, podcasts and blogs. The tools described below are the most commonly used by companies to ensure their online presence among as many of their target audiences as possible.

Search engine optimization focuses on the quality of the content uploaded to the site, rather than how much companies bid for paid keywords. The main goal of SEO is to provide strategic steps for web developers and content creators to optimize websites to rank high in search results (Drivas et al., 2020, p.2). Social media can be used to promote a company's goods and services as well as to build communities with current and potential customers. Turban et al. (2018, p.382) state that brands and companies can create pages on social media such as Facebook, Instagram, etc. to both communicate with their own customers and promote their products and services to them. Therefore, a variety of online promotion strategies can ensure greater coverage of the online channels where consumers currently spend their time, so that information is disseminated to a large number of people.

2.3. Social media

Social media can have a significant impact on how a brand is perceived by its potential customers, as long as the marketing department's efforts are focused on finding out what people are interested in and providing useful information to capture their attention. Chen, Davison and Ou (2020, p.2) consider the social media platform as one of the biggest innovations in information technology in terms of how a company can communicate with its potential customers and sell its products. McClure and Seock (2020, p.3) define social media as a platform where content is exchanged between multiple people, the quality of which has a strong influence on the rate of consumer engagement with a brand present on the Internet.

Consumer intentions vary widely and can be influenced by the type of actions brands take on social media. Ryan and Jones (2009, p.169) believe that the reason people spend time online is to interact and exchange information with people who are similar to them, while being drawn to things that are shocking, entertaining, informative, and engaging to activate them. They are also always looking for relevant things that are hard to get from other sources, which is why they join communities built in social networks (Bazi, Filieri and Gorton, 2020, p.231).

Demiray and Burnaz (2019, p.122) argue that as consumers in a brand community increasingly identify with a brand, the relationship that exists between the two parties takes the form of marketing effects such as purchase intent and word-of-mouth recommendations. Moreover, through social media, consumers can express their satisfaction or dissatisfaction and make their voices heard about the activities of a brand (Ismail, 2017, p.133).

Zollo et al. (2020, p.259) state that consumers' repeated positive experiences with a brand can lead them to perceive it as high quality and even to consider that brand as their first purchase option. In addition to creating and maintaining a positive experience with a brand, consumers should be encouraged to give back to the community they are a part of, as this goes a long way in forming a favorable attitude toward the company, which can indirectly improve purchase intent (Wang, Cao and Park, 2019, p.486).

Marketers can gain a lot from existing brand communities on social platforms, as consumers can decide whether they want to follow certain brands, but they can also give their consent to receive information and promotional messages from them (Zollo et al., 2020, p.257). According to Shiau, Dwivedi and Lai (2018, p.60), social media can provide a fairly strong competitive advantage for companies that rely on this type of strategy.

2.4. Content Marketing

Online users are overwhelmed by the amount of information that can be delivered through online channels, so they tend to select content that resonates with them and meets their brand needs and preferences. Hollebeek and Macky (2019, p.32) believe that content marketing refers to the creation and distribution of information in various forms that are relevant to the target audience present online in order to increase their engagement with the brand and develop trusting and lasting relationships. The same point of view is shared by Gray (2016, p.26), who argues that content marketing is a useful tool for building relationships and increasing brand awareness. Seyyedamiri and Tajrobehkar (2019, p.78) argue that brands are turning to content marketing to promote their products online by creating an element that is strong enough to attract the attention of the existing consumer community on social media, as well as providing opportunities to build close relationships with them. According to Lou et al. (2019, p.783), the main reason why brands turn to content posted on social media is to interact with the consumer community and strengthen brand loyalty levels.

There are four types of content recognized in the literature: informational, remunerative, entertainment, and relational. Wang and McCarthy (2020, p.3) argue that the informational content includes those clear and concrete details about a company's products, services, or profile, with the aim of making it easier for potential customers to understand its offering. Dolan et al. (2019, p.2,224) believe that users of social media only access, read, view, and then assimilate information, which is why they are likely to respond passively to informational content. Rewards have always drawn consumers' attention to product assortments, so this type of remunerative content is highly likely to increase online engagement. According to Dolan et al. (2019, p.2,216), remunerative content measures the extent to which financial rewards or monetary incentives are offered to a company's potential consumers in social media posts.

Cvijikj and Michahelles (2013, p.854) believe that the entertainment content has the greatest potential for influence, as it can increase consumer engagement in all its forms. Entertainment content is defined as information posted on social media that is intended to entertain users present online (Dolan et al., 2019, p.2,223). According to Tafesse and Wien (2017, p.20), relational content is meant to facilitate social interaction between members of a community that exists in social media, as they are encouraged to engage with it. Dolan et al. (2019, p.2,224) believe that the relational content type refers to posts that ask questions or

organize quizzes or games in a way that elicits a response from users, thus satisfying their need for social integration and interaction within a company's social media pages.

Content marketing has a strong influence on the decision to purchase products or services promoted through social media. According to Dedeoglu (2018, p.514), content distributed on social media platforms has the power to influence a company's potential customers during the purchase process in the sense that it increases their interest and curiosity about the brand.

3. Marketing experiment for testing three types of content in communication campaigns
3.1. Research methodology

Following the literature review, it could be observed that the authors have conflicting opinions regarding the effectiveness of the various types of content uploaded by brands on their social media pages. Thus, there is the need of evaluating the effectiveness of the main existing content categories (informational, remunerative, entertainment and relational), as well as identifying that content that determines certain behaviors among online users, respectively changes in their level of interaction with a brand. To solve such a decision-making problem, we first have conducted a marketing experiment on the Facebook and Instagram pages of a coffee shop. *The purpose* of the marketing experiment was to analyze the effects of three of the four types of content on Garage Cafe's social media interaction rates.

The main objectives of the marketing experiment were:
Objective 1: Identify the reach of each type of content
Objective 2: Identify the type of content that got the best engagement rate
Objective 3: Determine the level of influence of the length of the description text
Objective 4: Determine the level of influence of the day of the week in which the post is made
Objective 5: Determine the level of influence of the period of the day in which the post is made.

For this marketing experiment, we have created and published *12 posts* for Garage Cafe's Facebook and Instagram pages according to *four differentiating criteria*: type of content, the length of the description text, the day of the week and the period of the day they were made published. The combinations obtained by applying the four differentiation criteria guarantee the existence of a post for each of the available variants of any criterion. *The format* of all organic posts was *descriptive text with image*. Thus, for *the type of content criterion*, the 12 posts were classified as follows: four posts were informational, four posts were entertainment, and four posts were relational. Two posts of each type of content were created and uploaded with descriptions of up to 35 characters, while the texts of the other two posts were longer than 35 characters (*the length of the description text criterion*). In terms of *the day of the week*, two posts per week and one on the weekend were published for each type of content analyzed.

The experiment took place over a two-week period, from April 12th to 25th, 2021. The *target audience* was represented by people who follows the Garage Cafe's Facebook and Instagram pages, as well as those interested in specialty coffee who had interacted with similar posts in the past.

3.2. Research results

Because there was no precise control over the number of people who were exposed to the organic posts created in this experiment, two indicators specific to social media networks could be measured: *the reach* and *the engagement rate*. Thus, Facebook users were most likely to see informational posts (21.15% on average), with relational posts coming in second. As far as the Instagram platform is concerned, relational posts managed to register a higher reach than informational posts, but the difference between the two types was relatively small (34.75% and 34.28%). One possible explanation for the higher reach of informational posts on Facebook is that when it comes to specialty coffee shops, most people are interested in the details of the

coffee brews they can consume, so they tend to interact to these types of posts. People who spend more time on Instagram, on the other hand, prefer to interact with those posts that reinforce their sense of belonging to the community, which leads them to follow those brands that provide relatable content, and consequently, those posts appear in their feed.

The two ***informational posts*** with descriptions longer than 35 characters had completely opposite results on Facebook, so the difference was most likely in *the message* they conveyed. In the case of the first post, the text described in an interactive and creative way how the Latte was brewed, highlighting key terms such as the country of origin of the assortment and its flavors. On the other hand, the other post represented a more technical presentation of a recipe, mentioning the name of the assortment, its flavors, grammage, and extraction time. Thus, it can be said that people were more likely to pay attention to a creatively written text than to a technically presented one. Another factor was *the photo*: online users were much more likely to respond to a post with a person making coffee as the central element than to a simple cup of coffee with the Garage Cafe logo in various positions (at the espresso machine, on the counter, or in front of the cafe). Informational posts with less than 35 characters didn't gain such high engagement rates on Facebook, a possible explanation being that with a relatively small number of words, not enough new information could be embedded to catch the attention of the cafe's followers and generate a high level of their interest. On Instagram, posts in this category were ranked almost the same for the same reasons mentioned above. Using *the day of the week* as an evaluation criterion, the informational posts published on the weekend didn't perform as well as the others uploaded during the week, while *the time of publication* on the Garage Cafe pages hasn't as much of an impact on the engagement rate. However, it can be argued that posts with descriptions longer than 35 characters would perform better if uploaded in the morning, while those with fewer words can gain a higher engagement if posted in the afternoon.

The entertaining post with the highest engagement rate on Facebook differed from the post with the lowest engagement rate for every criterion in the research methodology. In terms of *the length of the description text*, it turned out that the two posts that were longer than 35 characters still had higher engagement rates on Facebook, while posts that had descriptions with shorter text lengths (under 35 characters) performed better on Instagram. Because each photo had a completely different symbolic element, it is estimated that users on both platforms, whether followers of the cafe' pages or people who had previously responded to similar posts, were most likely to interact with the post that captured a pet. The reason for this could be that dogs and cats are basically a source of happiness and good mood for people. On the other hand, visuals that capture elements of the cafe theme were unlikely to generate much response from Facebook users. However, it turns out that Instagram's users were the ones who would prefer coffee shop-themed icons to some pretty funny coffee cup placements. In terms of *the day of the week* on which entertainment posts were published, those uploaded during the week performed much better for Facebook than those published on the weekend. So entertainment posts on the Facebook page should be uploaded during the week, while on Instagram they could be posted even on weekends, with a good chance of high engagement rates among the cafe's followers. As with the type of informational content, *the time* at which entertainment posts were uploaded to Garage Cafe's social media pages hadn't so much of an impact on the results. However, on the Facebook page, entertainment posts could be uploaded in the afternoon, as opposed to Instagram, where they would be better uploaded in the morning.

Both ***relational posts*** that gained the highest engagement rates were similar in their main element of the photos, so followers of the page were more likely to interact with the images that showed customers being served in front of the Garage Cafe, regardless of whether the angle was from inside or outside the cafe. However, the two posts differed in all the criteria that went into creating the content plan, such as: one of the posts had a text length of more than

35 characters and was uploaded to the page in the afternoon on the weekend, while the other post had a description with a lower word count and was published in the morning during the week. Therefore, the preference of consumers to interact with those posts that capture moments spent in the cafe can be highlighted, reinforcing their sense of belonging to the group, of integration into the community, through the very act of serving coffee by the employee. For relational posts that asked online users to answer one question each, the longer-described post performed better. The reason for the high level of interaction with the questions could be that both cafe followers and other coffee drinkers who had liked similar posts in the past were more likely to react or even comment when were asked about their preferences for Garage Cafe coffee products. On Instagram, the ranking of relational posts had changed significantly, with descriptions of posts uploaded to this social media platform preferably less than 35 characters. Followers of the Garage Cage pages were also more likely to interact with photos that capture customer service moments and posts that ask them questions, although the one about their coffee preferences didn't engage them so much. In terms of *the day of the week*, relational posts could only be uploaded to Facebook on a Saturday or Sunday, with a better chance of getting reactions on the platform on weekends. Instead, to ensure a higher engagement rate, this type of posts could be upload on Instagram page during the week. Also, the relational content that is published during the week should be posted in the morning, while on weekends, the afternoon hours should be targeted.

4. Quantitative research on the impact of three types of content on user engagement
4.1. Research methodology

As a result of the marketing experiment conducted for the specialty coffee shop Garage Cafe, it was possible to identify those types of content that drive the highest engagement among online users on both Facebook and Instagram, as well as what contributes to high engagement rates. However, the question is how to determine the actual preferences of Garage Cafe's followers in terms of what type of content the coffee shop uploads to its social media pages and what they are most likely to interact with. In order to be able to compare the actual behavior of online users with what they say would really attract their attention, quantitative research was conducted using the survey method. ***The purpose*** was to evaluate the effectiveness of the three types of content published by Garage Cafe among consumers in social media.

The main objectives of the quantitative research were:
Objective 1: Determine the reasons for following Garage Cafe's pages
Objective 2: Identify the type of content respondents are most likely to interact with
Objective 3: Determine the post with the highest level of appeal among respondents (by each content type: informational, relational, and entertainment)
Objective 4: Determine the type of format respondents want to continue interacting with.

The ***research method*** used was an online survey, with a questionnaire created on the Google Forms platform, whose link was included in the description of the post dedicated to it, which was uploaded on both the Facebook and Instagram pages of the Garage Cafe brand. Data was collected between May, 10th and 16th, 2021, giving respondents 7 days to complete the questionnaire.

The researched population consists of all people aged 18-54 who follow Facebook and/or Instagram Garage Cafe pages. Since this research was conducted as part of the presented article, and considering that this questionnaire was uploaded on the pages of the specialty coffee shop Garage Cafe, which does not guarantee a very high response rate, the sample consisted of 50 people.

The ***sample structure*** was determined using the stratified sampling method. The selection criteria for respondents were *age* and *gender*. Thus, 52% of respondents were women, while

48% were men. In terms of age category, 5 respondents were aged 18-24 (3 females, 2 males), 15 respondents were aged 25-34 (8 females, 7 males), 19 were aged 35-44 (10 females, 9 males), and 11 were aged 45-54 (6 females, 5 males).

The research instrument had a total of *30 questions* and was distributed in three variation forms: one dedicated to users who follow Garage Cafe on Facebook, another for those present on Instagram, and a third valid for followers on both platforms, given the fact that the type of behavior may differ from one social network to another.

4.2. Research results

The main reason people follow Garage Cafe on social media was to get *news about the coffee brews and the business*. Garage Cafe followers agreed that the information they received about the cafe's activities, the coffee offered to customers, and the environment itself increased their trust in the service provided by the staff, so the transparency Garage Cafe demonstrates plays a very important role in the loyalty of people who visit the cafe. The *types of content* that would encourage followers to respond in any way (like, comment, or share on their personal page) differ depending on the social network they spend time on, so *informational posts would get more attention on Facebook*, while *entertaining posts would get more likes on Instagram.*

Half of Facebook users were more interested in visuals that showed *employee making different coffee products*, and 60.5% of Instagram followers said they would interact more with these types of posts (see Figure 1). At the same time, it should be noted that while posts that illustrated cups of coffee didn't have high engagement rates, followers were interested in learning more about the coffee brews they can enjoy at Garage Cafe.
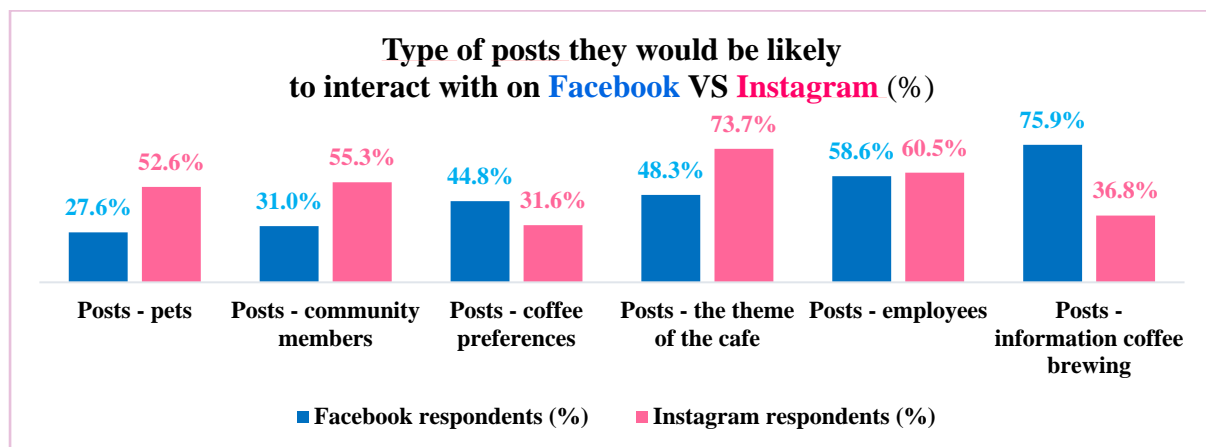
Figure 1. Type of posts they would be likely to interact with on Facebook VS Instagram (%)

More than half of the respondents said that *the post with a pet* was the one that was most interesting to them. However, Facebook users were also likely to react to photos of coffee cups in suggestive, ironic, feel-good positions. On the other hand, posts on Instagram were more likely to succeed if they included *elements that were representative of the Garage Cafe theme*. Although the posts created as part of the experiment highlighting the cafe's theme hadn't high engagement rates, people on social media believed that these visual elements would make them want to visit the Garage Cafe (see Figure 2). The posts that captured *customers spending time at the Garage Cafe* generated positive responses by highlighting the sense of community that comes from being served by an employee, and were appreciated by more than half of the respondents. Most respondents agreed that photos of their pets in front of the cafe improve their mood, and that they feel more connected to the Garage Cafe community because they see posts

of customers spending time there. The coffee shop' followers also appreciated that *the post with information about the cafe would increase their confidence in the coffee types offerings*.

Respondents' opinion about Garage Cafe posts
(on a scale of 1 to 5)

The posts that contain elements that are representative and in the theme of the cafe make me want to visit.	4.34
The posts with information about the cafe increase my confidence in the coffee types offerings.	4.26
The posts that capture pets in the cafe improve my mood.	4.24
The posts that capture customers as they spend their time in the cafe make me feel closer to this community.	4.22
The posts that feature people who brew the coffee make me curious about it.	4.16

Figure 2. Respondents' opinion about Garage Cafe posts

Most respondents also would like to interact with *video posts* on Garage Cafe's Facebook page, while more than half prefered *carousel posts* on the Instagram platform. Last but not least, it turned out that the posts with the highest interaction rate on Facebook or Instagram were the most liked by the cafe' followers who participated in the research. The main elements that attracted their attention in all the posts analyzed were the photo and the message conveyed.
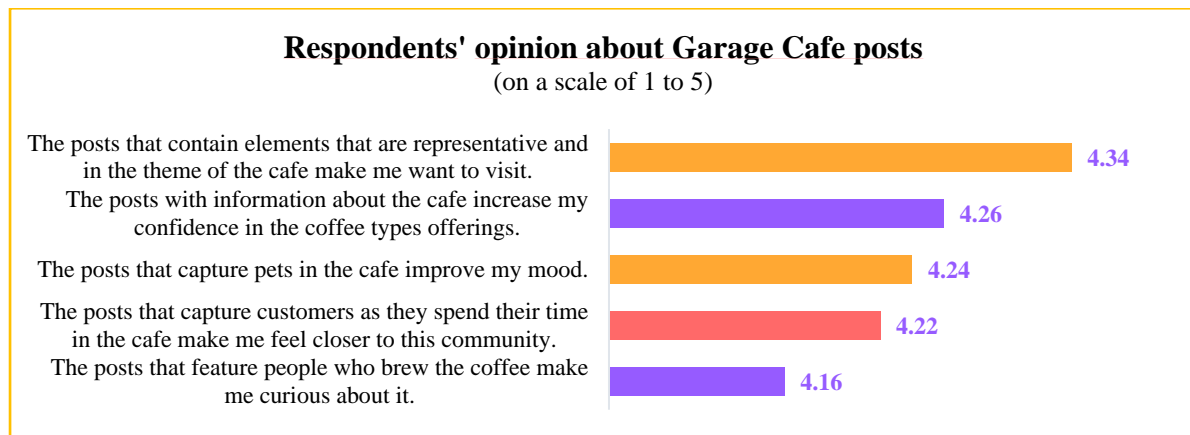
5. Conclusions, managerial implications and future researches

The analysis of marketing experiment showed, as we might expect, that ***informational post*** were shown much more on Facebook, while on Instagram users were more likely to see ***the relational posts***. However, the way they interacted with those types of posts were different, because in terms of engagement rate, ***the relational posts*** would be most likely to succeed on Facebook, while ***the entertainment content*** would be more effective on Instagram. Online users have interacted much more to the photo capturing an employee brew a Latte, as opposed to posts capturing a cup with the cafe's logo. On both social media networks, posts that captured customers spending time at the Garage Cafe performed best, because of their sense of integration into the community. In the case of entertainment posts, it turned out that those with pets were more likely to get favorable results on both social media networks. Facebook users were also more likely to respond to photos of cups with coffee, while representational cafe symbols were more popular on Instagram.

Measuring the declared interaction with the three types of content both Facebook and Instagram, within the quantitative research, we found out that ***online users would mostly interact with relational content*** published by the coffee shop. They had a positive opinion about the entertainment posts and were even more inclined to visit Garage Cafe. Also, informing them about the cafe's activities increases their trust. Most respondents agreed that photos with pets in front of the cafe improve their mood and that they would feel more connected to the Garage Cafe community because of posts capturing customers spending time in the coffee shop. As an overview, respondents declared that informational posts would capture their attention more on Facebook, but on Instagram they would interact with entertaining posts. They would also like to interact with video posts on the Garage Cafe Facebook page, while more than half of Instagram users prefer carousel posts, examples of which include those showing coffee brews or different angles inside or outside the cafe.

In terms of ***the practical implications*** of these two conducted researches for the Garage Cafe, it is recommended that the coffee shop publishes in the morning the informational posts

that have a person making coffee as the central element with a description longer than thirty five characters, uploaded on both Facebook and Instagram pages. In the case of entertainment posts, those capturing pets could be published on Facebook page during the week, after twelve P.M., with descriptions longer than thirty five characters. The relationship posts that will be published to the Garage Cafe pages should capture the moments customers spend at the cafe. It would be preferable for these to be published to Facebook on a Saturday or Sunday afternoon with a longer description, and to Instagram anytime during the week in the morning with a smaller description. In conclusion, the Garage Cafe specialty coffee shop should focus on emotional content categories, but also regularly upload informational posts to its social media pages in order to maintain the level of transparency it displays to its followers. Alternating the image+text format with the video format on Facebook and *the carousel format* on Instagram could also be considered, so that the cafe creates diversity on its social media pages, but also further encourages users to interact with the uploaded posts.

For social media professionals, the study helps them to understand how three of the four existing types of content would perform on Facebook and Instagram pages, with affective content having a much higher potential to increase user's engagement rate. They could test different types of content on other social media platforms, such as TikTok or LinkedIn, to see how their performance changes. The researches also concluded that a single type of content doesn't guarantee the success of a social media communication strategy, but is based on a combination of several factors that should always be taken into account, namely the four criteria that formed the basis of the marketing experiment: type of content, the length of the description text, the day of the week and the period of the day. As a result, marketers could test the analyzed types of content in their own marketing strategies, building different combinations of the factors above to find their own succesful recipe for the communication strategy.

In the case of marketing theorists, the two conducted researches contribute to the understanding of online consumer behavior across three of the four content types. This would allow them to analyze in depth the types of behaviors that consumers in different markets exhibit depending on the type of content communicated by brands, providing additional explanations as to why they exhibit these behaviors and what factors would contribute to triggering them, in addition to the criteria used in the marketing experiment.

One of the **research limitations** of this study was **the field of analysis**, because the coverage area was limited: more specifically, the research focused only on the specialty coffee market, where coffee purchasing is more of an impulse behavior. In other words, the performance of types of content for various products (or services) that involve rational behavior hasn't been analyzed, which is why it is recommended that future researches be conducted in other areas of activity. In this way, there could be a comparison between the results from different industries in order to identify similarities or contradictions about those types of content performances.

On the side of the research methodology, a first limitation was the small size of the survey sample. Therefore, if a larger number of people had participated in the survey, we would have had more results on the performance level of the three types of content. It is recommended that future researches be conducted with a minimum of 100 respondents, because the greater will be the number, the greater will also be the accuracy of the data. Also, the period of the day in which the posts were published didn't include "evening" moment because very few people consume coffee after 7 P.M. But it could be included in other researches where the consumption of a product or the provision of a service isn't affected in any way by the time of the day (such as chocolate consumption). At the same time, the experiment marketing in this study took place over a two-week period in the spring, so future researches should take into account that the seasonal component could also be an influencing factor on the results obtained by the four

types of content. In addition, it is recommended to extend the time period of future marketing experiments to explore a larger number of combinations and to make comparisons between combinations of similar posts to ensure better data accuracy.

In the case of this study, all of the posts had the "description + image" format, but it turned out that most respondents declared that they also would like to interact with video posts on Garage Cafe's Facebook page, while others would prefer carousel posts on the Instagram platform. Given this result, it is recommended that future researches apply the types of content to different formats in order to analyze the impact of this factor on social media KPIs. Last but not least, there was no analysis of the remuneration content in the study, as the Garage Cafe's owner didn't give us the permission for the use of this type of content on cafe' pages. Therefore, it is recommended that this type of content be included in future researches to determine its role in brands' communication strategy and the types of behaviors it would induce through online users as opposed to other types of content.

Acknowledgments

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Revolutionizing Marketing Research Through AI: comprehensive review of the past, present, and future

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Abstract
In the last years, as artificial intelligence (AI) is more and more widely accessible to everyone, a breakthrough for the course of business growth is also available. Having this in mind, the purpose of this study is to provide a comprehensive review of the impact of AI on the practice of marketing research. For this study a comprehensive literature review was included focusing on academic papers, research articles, industry reports, and relevant sources to gain insight into the application of AI in marketing research. The main findings of this research paper demonstrate how AI can revolutionize market research by improving data analysis, enabling personalization, enabling real-time insights, and addressing ethical concerns. Altogether, this study highlights the transformative impact of AI on market research, emphasizing its potential to improve data-driven decision-making, enable personalized marketing strategies, and address ethical concerns, thereby providing valuable insights for organizations seeking effective and integrative insights. AI provides practical recommendations and future research directions to help organizations realize the potential of AI and make informed decisions for successful integration implementations.

1. Introduction

In recent years, the use of artificial intelligence (AI) has become a growing concern for marketing researchers. In particular, the use of AI in the research and development of marketing strategies has proven to be a powerful tool in increasing the effectiveness of marketing campaigns. One of the research tools that has gained popularity lately is eye-tracking, which measures the visual behavior of consumers as they interact with different marketing elements.

This paper focuses on exploring the literature review of using AI in marketing research. The main purpose of this paper is to understand better the use of AI in marketing research practices and the benefits of it.

2. Literature Review on Marketing Research and Artificial Intelligence

Neuromarketing has become an area of interest in both academia and business, as advances in neural recording techniques and interpretation algorithms make it a powerful tool for detecting consumers' unspoken responses to marketing stimuli. Neuromarketing is an emerging field with business and advertising opportunities. Therefore, advances in this field require proper documentation to capture the state of the art (Rawnaque et al., 2020). Neuromarketing techniques have the potential to provide insights into the consumer mindset that traditional methods in marketing research cannot provide this is why researchers have established the foundations of this field with the method of "selling to the old brain" by conducting research on sales, marketing and neuroscience (Ahmed et al., 2022).

Also, Iacobucci et al. (2019) specifies that nowadays for having a new approach in research marketing analytics requires a holistic approach that combines multiple techniques, ideally using different types of data that fit the company profile and are interpreted in context. This is why combining AI in neuromarketing gives the potential to revolutionize marketing strategy by combining neuroscience, data analytics and machine learning. AI is a technology that simulates human intelligence in machines, which aims to make computers solve real-world problems with formal reasoning and decision-making capabilities (Bansal and Gupta; 2023).

AI has touched almost all aspects of human life, including industries, business, education, health, and consumer goods (Bansal and Gupta; 2023). AI is popular among marketers and can help recognize patterns in consumer behavior by extracting and processing personal information from social media, browsing behavior and online shopping(Bansal and Gupta 2023; Shapiro 2017).

Combined with neuromarketing, AI can create a very powerful marketing mix that captures data on the impact of brain signals in response to certain stimuli (Bansal and Gupta, 2023). Neuromarketing tools can help understand emotional reactions to marketing stimuli and make accurate, unbiased consumer judgments (Varghese, 2022). Neuro-impulse and activity monitoring systems such as EEG and Eye-tracking can help in conducting marketing studies (Varghese, 2022). AI can use consumers' cognitive processes to draw conclusions from data provided by neural pulses, facial expressions, and emotions (Varghese, 2022). In his study, Varghese (2022) claims that the combination of AI and Neuromarketing can remove limitations and make tools and methods more accessible for the business to make decisions and take action.

Using the current literature background, a research project based on secondary resources was developed as a way to learn about the current need for using AI in marketing research field in order to adapt to new technological changes and opportunities. Therefore, this article complements the current review on how to integrate a system in marketing research that is sustainable for the present and future through AI.

3. Secondary research: methodology & results
3.1. Methodology

In search of an exploratory approach, a research project based on secondary sources was chosen in order to gain insight about the use of AI in use of marketing analytics. This research project objective related to getting a better understanding of the evolution of AI in marketing research, by getting a comprehensive overview of the field, from past, through present and towards the future. The search for the papers on this topic was based on keywords like 'AI in marketing research', 'neuromarketing' and 'AI in neuromarketing'. The criteria used to select the papers included in this secondary data research project related to the publishing year: there were three major reference time frames included for the three major categories of this analysis – past, present, future, and also to the scientific databases where the keywords returned valuable results: Sagepub, Emerald, MDPI, SpringerOpen, Wiley Online Library, CEEOL. As a result,

a total of 18 papers on AI & marketing research were included in the present analysis, as seen in the following subchapters.

3.2. Using AI in Marketing Research: Past

The foundations for artificial neural networks were indeed laid in the 1940s and 1950s. McCulloch and Pitts (1943) proposed a non-learning computational model for neural networks that set the stage for the study of both biological processes and the use of neural networks in artificial intelligence. This work led to research into neural networks and their connection to finite state machines.

In 1958, the perceptron, a pattern-recognition algorithm, was created that provided significant progress in this field (Rosenblatt; 1958). However, research stagnated after the publication of a book by Minsky and Papert (1969), which highlighted the limitations of fundamental perceptrons and the lack of sufficient computing power to process useful neural networks. However, by that time, deep learning methods for multilayer perceptrons (MLP) were already known.

In the 1960s, the first deep learning MLP was proposed by Alexey Grigorevich Ivakhnenko and Valentin Lapa in 1965, which used incremental layered training based on regression analysis (Schmidhuber, 2015). And, in Werbos (1982) applied backpropagation to MLPs in a way that has become standard.

The more complex multilayer artificial neural networks that form the basis of much of modern machine learning did not come to fruition until the 1980s with Werbos study and beyond, when significant advances were made in the implementation and application of these techniques.

3.3. Using AI in Marketing Research: Present

AI has become increasingly prevalent in marketing research, with numerous studies exploring its potential applications. One such study by Verma et al. (2021) conducted a comprehensive review of AI in marketing using bibliometric, conceptual, and intellectual network analysis of extant literature. The review aimed to provide the information that artificial intelligence is the future of our society. With the development of technology, the world has become a network of interconnected networks. Technology deployment led to investment in artificial intelligence (AI) to analyze big data to generate market insights. Meanwhile, Mariani et al. (2022) conducted the that offered an integrated view of the body of knowledge of AI that has been published in the marketing field and states that marketing automation uses both active and passive ways to get to know potential buyers, where the last ones rely on past transaction information or click data. This is an inherent need for researchers to understand how consumers make AI-supported decisions and the use of big data is also identified as an opportunity to better understand consumer behavior.

Another study by Chintalapati and Pandey (2022) categorized marketing research based on inferences from earlier studies and explored the use of AI in marketing as an emergent stream of research. This study reveals several key findings. The most researched areas for the application of AI in marketing are "digital marketing and e-commerce" and the human aspects of AI, especially in terms of its functional impact on sales and marketing. Researchers are increasingly interested in studying the impact of artificial intelligence on marketing from a technical and strategic marketing perspective. This demonstrates the wide application of AI in marketing and highlights the need for further research to fully understand its potential in different fields.

All these studies highlight the potential for AI to revolutionize marketing research and offer insights into future directions for research in this field. AI has the potential to enhance

various aspects of marketing research, including data collection, analysis, and interpretation (Chintalapati and Pandey; 2022). With the growing availability of huge data, improved computational processing power, and novel AI approaches, learning algorithms, and applications, the practical use of AI in marketing research has significantly accelerated in the past decade (Perifanis and Kitsios 2023).

AI can help marketers to identify patterns and insights in large volumes of data that would be impossible for humans to detect. It can also be used to create more personalized and targeted marketing campaigns, which can improve consumer satisfaction and loyalty. However, there are also challenges associated with the use of AI in marketing research. These include issues related to data privacy, ethics, and transparency. To fully leverage the potential of AI in marketing research, further research is needed to develop more advanced algorithms and methods for data analysis and interpretation (Chintalapati and Pandey; 2022).

The study conducted by Chintalapati and Pandey (2022) examined how MLP and AI technologies are leveraged to improve business strategies and identified key classification variables for each application using the Structured Content Analysis approach. The resulting taxonomy provides a structured description of the subject under analysis and includes managerial and practical use cases of machine learning in marketing. It was found that digital-native firms are overly represented in MLP utilization for marketing due to larger availability of data, and that technology, online entertainment, and social media are the most active industries in using ML for marketing. Furthermore, most MLP implementations in marketing fall into the 'product' category, referring to consumer experience improvement (Chintalapati and Pandey; 2022).

3.4. Using AI in Marketing Research: Future

The role of AI in advancing marketing research is comprehensive and its future implications are significant (Perifanis and Kitsios 2023). Neuromarketing is another aspect where AI can be used in marketing communication. Neuromarketing proposes to adapt neuroscientists and AI research to better understand consumer behavior and decision-making processes (Rawnaque et al., 2020). The objective of neuromarketing is to develop experimental models to better understand consumer behavior, decision making and processes applying method and theory from neuroscience and AI research (Rawnaque et al. 2020).

It is essential to review relevant research on AI tools and future trends to understand the scope and penetration of AI in marketing activities. AI can be used in marketing communication for personalization, marketing automation, neuromarketing, viral marketing, voice recognition and conversion optimization to achieve business goals and create discovery using AI (Bahman Peyravi et al., 2020). Additionally, AI can capture data on the impact of brain signals in response to certain stimuli, unlike focus groups and surveys. AI has also improved user experience to a great extent, leading to better analysis of mass data and better understanding of consumer behavior (Bansal and Gupta, 2023).

Furthermore, AI can help marketers make pricing decisions with less hesitation (Bansal and Gupta, 2023). By integrating with neuromarketing tools, AI can accurately measure consumers' emotions to understand their decision-making process (Bansal and Gupta, 2023). The application of machine learning in marketing further helps to understand and predict human behavior (Bahman Peyravi et al. 2020). AI is revolutionizing the marketing landscape and has become one of the most powerful modern tools for digital marketing experts as it improves communication and engagement with customers (Bansal and Gupta, 2023)(Bahman Peyravi et al. 2020). Impressively, marketing is now the fourth largest use case for AI technology in terms of resources spent, indicating the usefulness of AI in marketing

communication (Bansal and Gupta, 2023). All in all, integrating AI into marketing communication provides intelligent solutions that can lead to successful marketing strategies.

Artificial intelligence (AI) presents ethical challenges regarding fairness, transparency, privacy, autonomy, accountability, economic impact, security, and long-term implications. These concerns involve avoiding bias and discrimination, ensuring explain ability of AI decisions, respecting privacy, and data protection, maintaining human control, establishing accountability and liability frameworks, addressing job displacement and socioeconomic disparities, guarding against malicious use, and considering broader societal implications. To navigate these challenges, collaboration between stakeholders is essential, with a focus on transparency, accountability, fairness, and human well-being in AI development and deployment.

The future holds tremendous potential for advancements in artificial intelligence, automation, the Internet of Things, healthcare, sustainability, virtual and augmented reality, and the development of ethical and regulatory frameworks. These advancements may lead to sophisticated AI systems, changes in the job market, increased interconnectivity, improved healthcare outcomes, sustainable solutions to address climate change, immersive virtual experiences, and the establishment of guidelines to ensure responsible technology use. However, it's important to recognize that the future is uncertain, and these predictions are speculative, subject to unforeseen events, and require ongoing evaluation and adaptation as we progress.

4. Conclusions

Artificial intelligence has a long history in market research, with important milestones dating back to the 1940s and 1950s. Over the years, advances in neural networks such as perceptron algorithms and deep learning MLPs have shaped the field and paved the way for its current and future applications. Today, artificial intelligence is increasingly being used in market research, opening up opportunities for data analysis, personalization of marketing campaigns, and better understanding of consumer behavior. Looking ahead, the potential for artificial intelligence in market research is huge, with promises ranging from neuromarketing to pricing decisions to improving communication with customers, among others. However, ethical considerations must be considered, with a focus on transparency, fairness, privacy, and accountability to ensure responsible development and use of AI in market research.

This research has certain limitations that need to be recognized. First, the study relied on secondary data sources, such as academic articles and industry reports, rather than incorporating primary data collection methods. This reliance on the existing literature may have restricted the depth of the analysis. Secondly, the selection criteria used to include articles in the analysis may have introduced subjectivity, which could affect the completeness of the findings. Although efforts were made to ensure a representative sample, the inclusion/exclusion criteria could have influenced the results.

Future research directions should consider primary-data-based research, in-depth analysis through focus groups or interviews with both academics and practitioners in the field of marketing research and communication.

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The Impact of Blockchain Technology on Marketing through Social Media

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Abstract
Blockchain technology has become a particularly promising innovation in recent years, impacting various fields, including marketing. This study looks at how blockchain technology is impacting social media marketing. Through a literature review and case studies, the advantages and challenges of using blockchain technology in marketing strategies in the context of social networks are highlighted. Identified benefits include increased transparency and security, elimination of intermediaries, increased consumer trust and engagement, and increased authenticity and originality of content. However, challenges such as high costs, lack of regulation and standardization, and technical difficulties are also identified. Therefore, this study examines how blockchain technology can change the paradigms of social media marketing, providing insights and research directions for the future of this ever-evolving field. To identify this, we conducted an exploratory research on multiple articles, books and blockchain related websites, because it is a new technology and most of the information in this field can be found online. Moreover, we conducted a qualitative research based on expert interviews in the fields of blockchain and marketing through social media.

1. Introduction

Blockchain technology has become extremely influential in many fields, completely changing the way we interact and manage information. Its impact is increasingly evident in social media marketing. With the explosive growth of social media usage and consumers' increased reliance on these platforms, marketers are faced with new opportunities and challenges. In this context, the use of blockchain technology in social media marketing appears to be an innovative tool that can transform the way marketing campaigns and customer interaction work.

Initially designed as the foundational framework for digital currencies like Bitcoin, blockchain technology has now gained recognition as a revolutionary force with the potential to be applied in several marketing areas (Stoica, Popescu & Orzan, 2015). The widespread integration of social media platforms into the everyday routines of billions of individuals globally has significantly transformed the marketing industry, necessitating marketers to

proficiently utilize these platforms (Kietzmann et al., 2011). Recurring problems in the domain of social media marketing revolve around openness, data protection, and trust (Orzan et al., 2015). The implementation of blockchain technology presents a promising resolution to these difficulties, owing to its inherent characteristics of decentralization, immutability, and transparency (Tapscott & Tapscott, 2016).

The purpose of this study is to examine how blockchain technology plays a role in social media marketing and to highlight the impact this ever-changing sector is having. To achieve this goal, we will first study the concept of blockchain and its essential elements such as decentralization, security and transparency. Additionally, we will look at how these features of blockchain technology can address current social media marketing issues and gaps, such as fraudulent advertising, data management, and privacy protection. In this article, we will review studies and research that have examined how blockchain technology affects social media marketing. We will look at some of the ways blockchain can improve data validity and transparency, how it can provide effective ways to track marketing campaigns, and how it can increase trust between marketers and consumers. We will also talk about things that can go wrong when it comes to the adoption and implementation of blockchain technology in the marketing industry. We will conduct a qualitative research based on interviewing.

Finally, in this article we aim to highlight the importance of blockchain technology and its potential in social media marketing. Understanding its effect can help marketers and researchers develop marketing campaigns that are more effective, transparent, and relevant to customers.

2. Literature review

Within marketing strategies, blockchain technology provides a secure and transparent infrastructure for data and information transactions in social networks (Tselios, Drosos, & Matsatsinis, 2020). By using blockchain, marketers can create and monitor marketing campaigns in real-time, thus ensuring better visibility and tracking of results (Xu, Li, & Liang, 2020). Blockchain technology also facilitates content authenticity and originality by implementing intellectual property and copyright certification functionalities (Houshmand, Davis, & Goldhaber, 2019).

Another important use of blockchain technology in social media marketing is to improve the relationship between influencers and users (Pilkington, 2016). Blockchain can ensure transparency and trust in influencer recommendations, eliminating issues of fraud and hidden sponsorships (Jørgensen & Hauge, 2019). Through blockchain technology, users can verify the authenticity and integrity of content generated by influencers, thereby increasing their trust and engagement (Wang et al., 2020).

Moreover, blockchain technology can be one of the opportunities in tax optimization. Because tax planning means compliance with tax payments (Jakubowicz, & Munteanu, 2022), which can be optimized through blockchain, so a company can spend less in this area and redirect funds to marketing, for instance.

However, implementing blockchain technology in social media marketing is not without its challenges. High costs and technical difficulties are major obstacles to the widespread adoption of blockchain in this field (Sivarajah et al., 2017). There are also concerns about the scalability and efficiency of blockchain technology in the context of the large volume of data generated by social networks (Bai, Xu, & Xu, 2018).

According to Statista (2021), worldwide spending on blockchain solutions is projected to reach $15.9 billion in 2023 and can reach up to $19 billion in 2024, reflecting the growing recognition of the technology's potential across various industries which can be viewed in

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Figure 1. This significant investment demonstrates the belief in the transformative power of blockchain to enhance transparency, security, and efficiency in business operations.
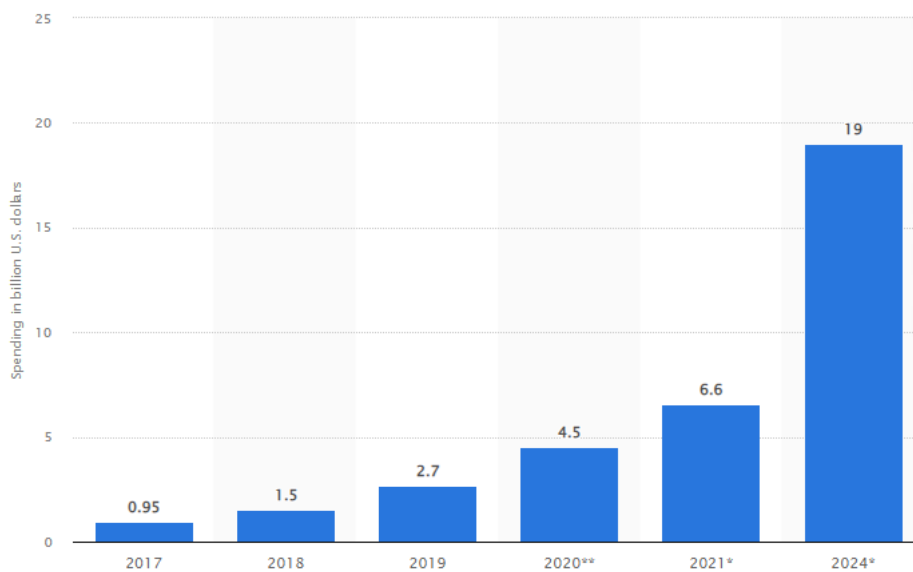

Figure 1. Spending on blockchain solutions in billions of U.S. dollars
Source: Statista. (2021). Worldwide spending on blockchain solutions. Retrieved from
https://www.statista.com/statistics/800426/worldwide-blockchain-solutions-spending/

Social media marketing could be revolutionized by blockchain technology thanks to its distinct characteristics and capabilities. Numerous academic studies discuss the benefits of using blockchain in this field. Blockchain technology, according to Li, Xu, and Huang (2020), offers transparent and decentralized data management, ensuring data integrity and doing away with the need for middlemen in social media marketing transactions. This raises credibility and lowers the possibility of fraud and manipulation. Furthermore, Kim, Cho, and Song (2019) contend that by giving consumers authority over their personal data, blockchain can alleviate privacy issues in social media marketing. Users can selectively share their information, maintaining their privacy while yet taking part in targeted marketing efforts, using smart contracts and encryption techniques. Additionally, blockchain offers a safe and unchangeable record of transactions and conversations on social media platforms, according to Singh, Khan, and Gupta (2019). This improves the openness of influencer marketing partnerships as well as the credibility and dependability of user-generated content.

Additionally, it is said in the study done by Sharma, Goyal, and Singh (2021) that blockchain technology can make it easier to verify social media data like follower counts and engagement rates. Marketers can assure the quality and authenticity of performance data and lessen the impact of false accounts and bots by recording these metrics on a blockchain. Furthermore, Choi, Kim, and Kim's research (2020) highlights how blockchain might support micropayments and incentive models for social media marketing. Content producers can receive direct compensation for their contributions through tokenization and smart contracts, boosting engagement and promoting a more decentralized and egalitarian environment.

The argument is made that blockchain technology can increase advertising transparency by confirming the legitimacy and efficacy of ad placements in the work of Xie, Liu, and Wang (2020). This can lessen problems with ad fraud and improve the general effectiveness and dependability of social media marketing initiatives.

3. Problem statement

Blockchain technology has a significant impact on social media marketing, bringing benefits such as increased transparency, security, increased consumer trust and engagement, as well as content authenticity and originality. However, there are challenges and obstacles that need to be addressed before a widespread adoption of blockchain technology in social media marketing, which will be found across this study.

In the context of social media marketing, the question arises as to the impact of blockchain technology on this field (Pentescu et al., 2014). As social networks represent a dynamic and vast environment of interactions between users, the need to investigate and understand how blockchain technology can influence marketing strategies, transparency, security, user engagement and authenticity of generated content is highlighted. Therefore, the main question addressed in this study is: "What is the impact of blockchain technology on social media marketing and how can it help improve performance and results in this field?". This statement of the problem presents the context, the need for the investigation, and the main question that guides the study of the impact of blockchain technology in social media marketing.
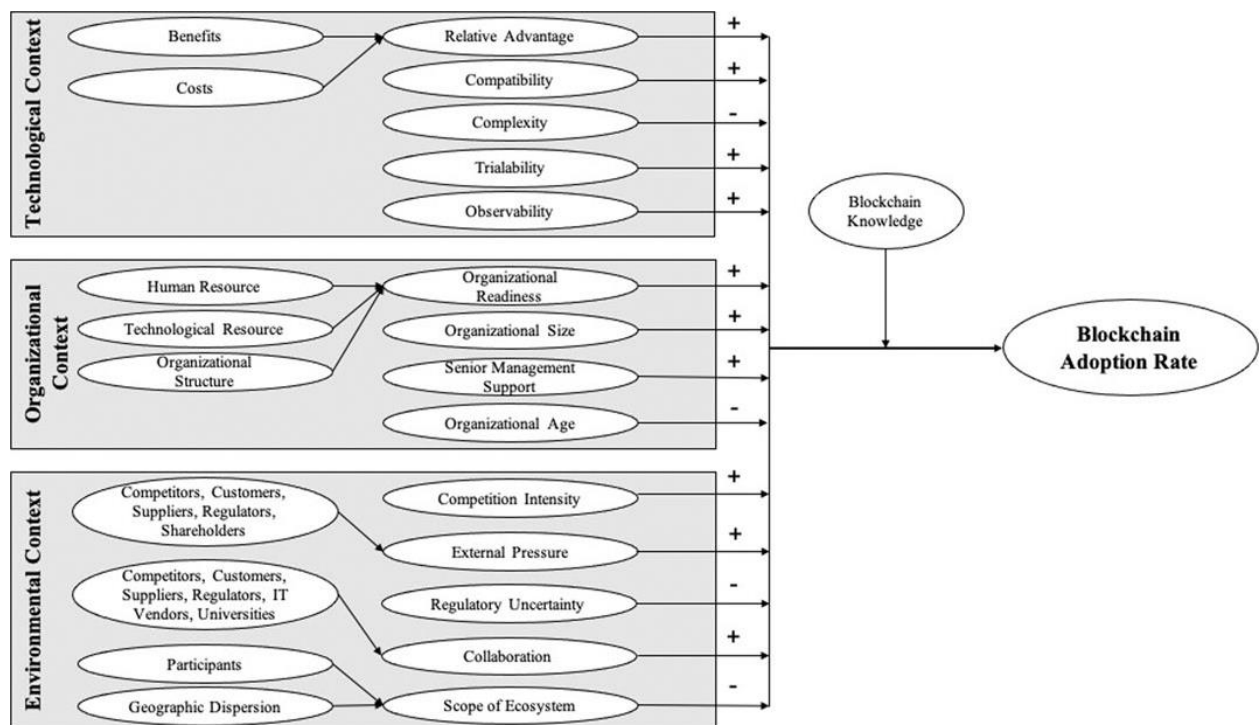
Figure 2. Blockchain Adoption Rate
Source: Lustenberger M, Malešević S and Spychiger F, 2021, Ecosystem Readiness: Blockchain Adoption is Driven Externally. Front. Blockchain 4:720454. doi: 10.3389/fbloc.2021.720454

The motivation for this study arises from the fact that blockchain is one of the technologies that will see a steadily increasing adoption in the coming years. The conceptual Blockchain Adoption Model is depicted in Figure 2 (Fernandes, Cunha, & Ribeiro, 2021). Several characteristics, including relative benefit, compatibility, complexity, trialability, and observability, are relevant in the technical setting. The perceived advantages and disadvantages of blockchain technology have an impact on the relative advantage. When it comes to the organizational context, elements like organizational size, senior management support, organizational age, and organizational readiness all play a big part. The availability of people and technological resources, as well as the organizational structure, have an additional impact

on an organization's readiness (Fernandes, Cunha, & Ribeiro, 2021). In the context of the environment, variables including the level of competitiveness, external pressure, regulatory uncertainty, cooperation, and the size of the business ecosystem are relevant. Competition, consumers, suppliers, regulators, shareholders, and IT vendors comprise external pressure, whereas universities, regulators, and IT vendors comprise external collaboration. The impact of each of these factors, whether positive or negative, is visually represented in the figure. Additionally, the introduction of "blockchain knowledge" serves as a control variable (Fernandes, Cunha, & Ribeiro, 2021).

4 Research Questions/Aims of the Research

This study aims to study the impact of blockchain technology on social media marketing, in the context where distributed ledgers are a technology that is just starting to be used globally and many Web 2.0 companies are transitioning to Web 3.0. And Amazon by partnering with Avalanche, Paypal by offering crypto services for customers, Meta creating a whole division for Metaverse and introducing NFTs to Instagram are just a few early examples. To understand where social media marketing is headed with the advent of blockchain technology and how it may evolve following implementation, we've built a series of objectives that can help us find out.
- Identify the advantages and disadvantages of using blockchain technology
- Measuring the impact blockchain technology can have on social media marketing
- Determining the intersection of marketing and blockchain
- Identifying the reasons why blockchain should be implemented in social media
- Analyzing the challenges that blockchain can bring to social media

5. Research Methods

To begin with, we conducted an exploratory literature search: we consulted various articles, books and online specialist publications to build an informative framework, both on blockchain technology and on social media marketing, to then find out what stands at the intersection of these, through an in-depth interview with blockchain, crypto and marketing specialists. We chose these scientific articles for reference because we wanted firstly to see what other scientists already found so far in their studies about blockchain and if they crossed it either with marketing and social media. We looked for the keywords „blockchain", „marketing" and „social media". After the research we made a few ideas for our future study and decided to create a qualitative research based on an interview for this article alone. After that we will try to test the hypothesis from this study in a quantitative research.

Most of the questions were open-ended to be able to identify all the blockchain factors that can make their mark on social media marketing, but also to measure what impact they have. The interview was conducted on 9 blockchain experts working in several fields. We had lawyers, tax consultants, traders, influencers, as well as marketing and blockchain specialists. We have explored the pros and cons of blockchain in general to then identify what impact it has strictly on the social media marketing area. The impact was analyzed through the opportunities and challenges that technology brings to this field, different case studies, the relationship between influencers and users of social media platforms, when and how will blockchain be implemented at large scale.

The interview guide was based on 12 open questions and 3 closed questions through which we tried to measure certain stimuli. When asked a question, some experts made additions and answered more at one point. Here are some key takeaways. The experts were interviewed on 7th and 8th of June 2022. This method of research based on interview was chosen mainly because it's a new technology, there are few studies in this field and we wanted to gather all

the information we could and after that test it in a quantitative study. The best way to receive information at the beginning is asking the experts who are working in this field, because they have already been through some undisclosed studies and tested different hypothesis in this area, but, because of lack of resources and time they couldn't publish this data.

These experts have already implemented and tested the knowledge from this study or worked on the legal, accounting, finance or advisory parts with projects who implemented blockchain in their company and studied the role of this technology in marketing through social media.

6. Findings

Below we will present the main advantages of blockchain in general transparency, security, independence from third parties, self custody, high speed, confidence, impossibility of data manipulation, traceability, verifiability, bringing instant cross-border payments, educating the public, eliminates bureaucracy.

Disadvantages and limits found by the experts are: high difficulty of understanding and application, the technology is at early stages, not fully developed yet, the existence of the confusion between blockchain and crypto, people thinking that blockchain means speculation, current infrastructure, lack of regulation, reduced education of the public, the transfer of responsibility from the intermediary to the user brings additional worries, high costs, low scalability.

The fields where blockchain will find implementations are: supply chain, logistics, marketing, finance and banking, real estate, governmental, freelancing, data processing, social media, patents and documents, medical and health. Now we will take some use cases presented during the interviews. The experts either founded and worked projects which already implemented this use cases, either helped and advised people who build those kind of applications. If we take government, for instance, the use cases are with storage of documents as non fungible tokens to optimize the costs and the traceability, or an application for electronic voting where blockchain provides the unicity of a single vote, traceability so no votes will get lost or misplaced and anonymity for users. In medical services, people can store they data in blockchain and get paid every time a company accesses the data In real estate, the application of blockchain is tokenization of investments so people who can't afford to buy a complete apartment, will be able to invest with other people and the rewards will be distributed proportionally with the investment made. What's important in supply chain is that blockchain can improve the traceability of items. In finances and banking, the main application is the cryptocurrency or the CBDC, which stands for central bank digital currency, i.e. currency developed by government in central banks through blockchain. These have lower costs, more secure and faster than the traditional payment system.

Why should blockchain be implemented in marketing through social media? In social media there is a process of gamification, where users get paid for posting, have ownership over their content, every post is unique and can be tracked so you can see who was the first to post it so others cannot steal it, both influencers and users can benefit from these applications. With blockchain, there will be less spam and fake bots who try to scam different people, because every account will be uniquely attributed to one person or entity. Moreover, in marketing blockchain can have a great impact on different campaigns who are made on blockchain and data can be stored forever, so you do not lose it when the platform decides to reset it and can reduce costs of implementation and can solve problems of GDPR, general data protection regulation. Furthermore, this authenticity and traceability will increase the trust between brands, influencers and users in social media platforms. But these opportunities come with a cost. What are the limitations of this technology in this field? Our experts found that the

implementation of technology is too expensive and difficult to do it because there are not too many experts, the process can take too long.

When asked when they will see blockchain implemented at large scale in social media the answered varied from they are being implemented now, till in 15 years. So 1 expert considered it will be implemented in 10-15 years, 4 experts said they will see the blockchain implemented over social media in 5-10 years, 3 experts agreed in 2-3 years and one expert said it is already being implemented. So most of them agreed that blockchain will take at least 2-3 years for large implementation, the median being a period of 5-10 years.

Blockchain will also create new emerging trends and future perspectives in this field: new channels of marketing, new wave of influencers who are specialized in this technology, people will be more focused on the quality of the information and not the quantity, only projects who solve a problem will find their way in the market. Some experts agreed blockchain will bring back social media to the people, not like how it is right now, when the platforms are in hands of big corporations.

Conclusions, future directions and research limits

Blockchain technology offers the potential to revolutionize social media marketing, bringing significant benefits in terms of transparency, security and authenticity of generated content. Using blockchain technology in social media marketing can increase user trust and engagement by providing a verifiable and immutable record of interactions and transactions.

Regarding the limits of this study, it's possible that the sample size of 9 experts may not accurately reflect the total number of specialists working in the fields of blockchain and social media marketing. The conclusions might only apply to the viewpoints and experiences of the chosen experts, and their applicability to a larger community might be constrained. A lot of qualitative research depends on individual interpretations and perspectives. The researchers' prejudices and preconceptions affect how the interview data is analyzed and interpreted, which could introduce some subjectivity into the results.

Additionally, the depth and scope of the insights gleaned may be constrained by the reliance on guided interviews. The format and interview questions may limit the possible answers and inhibit the creation of original or surprising viewpoints. Furthermore, due to its small sample size and context-specific nature, qualitative research frequently lacks statistical generalizability. The results might be context-specific and might not be transferable to other contexts or circumstances.

Further research directions for this study should be a quantitative study to test the hypothesis from this research and to measure different other stimuli. Moreover, we would like to see the role and the impact of other technologies like artificial intelligence and machine learning on marketing through social media and how they can be combined with blockchain.

In conclusion, implementing blockchain technology in influencer relationships can address issues of authenticity and fraud by providing a transparent record of influencer referrals and performance. However, there are challenges and obstacles to the widespread adoption of blockchain technology in social media marketing, such as scalability, regulation and standardization. And regulation can be a factor that can completely prohibit the development of the technology, as was the case with China when it completely banned cryptocurrencies on the territory of the country.

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