When Marketing Education Meets Artificial Intelligence: Boosting Students' Career Optimism in Tunisia

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ABSTRACT

The rapid advent of artificial intelligence evolves considerably in the marketing sector, prompting many academic institutions to modernize their training programs. Therefore, to evaluate the effect of these new methods on their confidence in training, and their capacity to generate new work opportunities, in this research among future marketing professionals in Tunisia. The empirical investigation was carried out from a questionnaire administered to students in the final year of their bachelor's degree in marketing in Tunisia. The realization of our research objective was ensured through a factor analysis of the collected data. Despite the challenges faced, students express an intense interest in marketing and believe in the abundance of opportunities in this field in Tunisia. Analysis of the results reveals that their level of optimism influences their future aspirations: optimists envision local entrepreneurial projects, while others turn to careers abroad or specific specializations. In summary, marketing students are confident in their professional future in Tunisia and see digital marketing as a promising avenue for creating new forms of work despite their limited resources.

Keywords: Artificial Intelligence, Marketing education, Perception of professional future, factorial data analysis, Tunisia

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1 INTRODUCTION

Advanced technology becomes necessary to successfully manage and integrate the significant amount of data generated by the customers. They are highly active online and are freely sharing information about their interests and experiences, which are essential for personalizing and enhancing the customer experience (Sahut & Laroche,2025). In fact, the adoption of Artificial Intelligence by businesses has become a major priority to meet this growing demand. Similarly, this development is driving the evolution of the marketing profession through new job opportunities.

The digital revolution is radically transforming our work conception by introducing new tools and paving the way for Artificial Intelligence and robotics. These developments will have a major impact on businesses and professions, affecting organizational structures as well as skills and composition of teams (Kınay & Ciğer, 2025). Traditional companies will need to adapt by learning from the innovative practices of digital players, including anticipating the necessary changes in their activities, recruitment and talent management strategies, as well as their operation modes. Actually, this transition must be initiated, given the magnitude of forthcoming changes. Digitalization fosters the emergence of new work models focused on collaboration, project management, and the encouragement of employee creativity and autonomy to enhance operational efficiency (Uriarte et al., 2025). Consequently, skills management methods and training programs are naturally evolving to adapt to this new environment (Monnerie, 2019).

We are talking about digital marketing training, which is updated and consistent with the global context. Given that it encompasses various activities to achieve business objectives, it is an essential function for business success as it helps identifying consumer needs, developing suitable products, promoting them effectively, and establishing lasting relationships with customers (Noer et al., 2025). Nowadays, we talk about behavioral retargeting, which involves adjusting online communication based on users' interests and expectations. Its goal is to identify non-converting clicks from customers interested to improve the conversion rate using recommendation algorithms (Jalilvand et al., 2025)). Although these tools enable modeling customer experience, it is essential to recognize that data generates stimuli that do not necessarily replicate. Therefore, it is crucial to integrate the customer context into model design for optimal personalization of the customer experience.

"Marketing education" is a key element for thriving in a competitive environment, connecting with customers, and emerging from the competition to ensure long-term business success. Following digital transformations in all aspects of human life (Stolterman & Fors, 2004), the importance of this mission has led to the continual valorization of marketing professions and the evolution of new attractive careers, resulting in ample employment opportunities for minimizing unemployment, as it offers a diversified portfolio of work possibilities (Buele & Llerena-Aguirre, 2025).

Indeed, numerous studies focus on presenting digital marketing tools and integrating associated new approaches into the academic training of marketers. In her recent article entitled "What Is the Future of Marketing Education?", Crittenden (2024) explores the developments in pedagogical approaches and content, particularly highlighting the deep integration of artificial intelligence into university marketing education. This transformation includes the introduction of sophisticated data analysis software, data mining techniques, advanced big data management, as well as the adaptation of communication practices and media to new paradigms, among other significant advancements (Wang et al., 2024).

The relationship between the degree of optimism and professional orientation refers to how an individual's level of optimism influences their career aspirations, choices, and outlook on their professional path. In other words, ambitious career aspirations traduce a high degree of optimism. Thus, optimistic persons are more likely to set challenging career goals and believe in their ability to achieve them and aim for positions of leadership, entrepreneurship, or making a significant impact in their field (Lelieur, 2025). They approach obstacles and view challenges as opportunities for growth and learning rather than insurmountable obstacles, enabling them to persevere the optimism attitude which is also linked with the enthusiasm to take risks and pursue innovative ideas. In addition, optimistic professionals are more likely to discover new career opportunities, venture into uncharted territories, and embrace change. Furthermore, they generally have strong interpersonal skills and positive attitude towards networking, making them proactive in building professional relationships and seeking mentorship. Consequently, the degree of optimism is connected to higher levels of job satisfaction and overall well-being in the workplace by having more confidence on their competence allows them more solutions, such as to diversify career transitions, take hold of unexpected opportunities, and thrive in dynamic work environments (Gabor et al., 2025). This optimistic individual expresses greater satisfaction in their careers, find meaning in their work, and maintain a positive work-life balance.

This paper explores the deep integration impact of artificial intelligence into university marketing education on marketers' sense of optimism and their perception of future career prospects. We also intend to study the influence of artificial intelligence on the creation and stimulation of new job opportunities, as well as to study the future marketers' perceptions in a digitized economy.

We investigate either digitalization has a positive impact on the sense of optimism regarding employment opportunities or does pessimism have dominated the vision of future marketers in Tunisia, which is a country facing unemployment issues and serious economic challenges. We seek to understand whether developments in learning methods and content contribute to an improvement in attitudes and the degree of optimism, subsequently positively influencing the perception of new marketing graduates regarding their professional future.

To address this issue, we structure this paper as follows: A literature review describing the integration of new learning methods encouraged by the development of artificial intelligence followed by a description of the research methodology and the artificial intelligence methods implemented to analyse the data. Finally, we have concluded. Developments in the field. Share the theory that underpins the research study adopted and any model that you followed to help with the methodology of the work and discussion of the data.

2 LITERATURE REVIEW

The rise of major players in the digital economy does not only mark a gradual evolution, but also an abrupt change, akin to a modern industrial revolution. Traditional companies that underestimate the magnitude of this change are taking serious risks to their survival. This digital revolution is characterized by a constant stream of innovations, virtually impacting every sector and continuously expanding commercial boundaries. In fact, technology in general, more particularly digital technology, is advancing at an unprecedented pace and creativity, demanding a profound overhaul of corporate cultures, organizational structures, and management approaches.

Several authors emphasize that digital visionaries have not only brought innovations to their products, services, and economic approaches, but also transformed management by abandoning old methods in favor to horizontal organizational structures to foster autonomy and creativity, thus avoiding stifling hierarchies (Monnerie, 2019). This perspective implicitly assumes that flatter organizational structures are universally beneficial, an assumption that remains insufficiently questioned in the literature. Such transformations may generate, in practice and particularly in organizations with entrenched routines, coordination challenges, resistance to change, or skill mismatches.

Digitization, which is driven by social media, mobile telephony, data analytics, and embedded devices, brings significant enhancements to business activities, such as enriching the customer experience, optimizing operations, and creating new business models (Fitzgerald, Kruschwitz, & Bonnet, 2014). However, these benefits also present major challenges to the business environment. Thus, introducing new methods of working with stakeholders and establishing new service delivery often requires firms to redefine governance structures, data management practices, and relationship dynamics (European Commission, 2013). Despite the growing body of work documenting the positive outcomes of digitization, relatively little attention has been paid to the organizational tensions and strategic trade-offs that emerge during its implementation.

The increased understanding of digital transformation is reflected in the widespread the adoption of business processes and practices aimed at maintaining organizational competitiveness in an increasingly digital world (Kane, 2017). While the ever-evolving digital economy adoption is commonly interpreted as evidence of successful transformation, the existing studies suggest that this transformation results in gradual changes in business models, operations, and customer experiences (Morakanyane et al., 2017). As the implementation of digital tools does not necessarily guarantee strategic renewal or long-term competitive advantage, the depth and effectiveness of digital transformation raise as important questions.

Indeed, Big Data is transforming the perception of the online customer journey, offering comprehensive market analysis through an innovative approach based on large datasets (Amado et al., 2018 ; Diebold, 2012). Originally focused on collecting and analyzing customer data through relational database management systems, web analytics tools have allowed the measurement and evaluation of browsing paths (Maghraoui & Belghith, 2019). With the emergence of social networks, Big Data now integrates viral data from the Cloud, facilitating real-time analysis for a better understanding of customer interests. Concurrently, the development of mobile applications intensifies human-machine interaction, enabling precise monitoring of customers' digital journeys and analysis of browsing context, particularly for sentiment evaluation of the customer experience. By using data-driven analytic learning, companies can leverage social networks to filter interactions and enhance the customer experience (Barzenji & Atanasoov, 2018). The literature remains divided on the extent to which Big Data-driven insights translate into improved strategic decision-making because its effectiveness is largely dependent on organizations' analytical capabilities, data governance frameworks, and interpretive skills.

Marketing is directly impacted by the advancement of an economy that transcends space and time constraints, driven by artificial intelligence (Lévy & Jouyet, 2007). Indeed, while the literature highlights the transformative potential of AI in marketing, the emergence of new economic models focusing on dynamic interaction with the customer aims to generate value at the emerging frontiers

of the business world, optimize processes that embody a vision of the customer experience, and develop fundamental capabilities that support the entire structure (Agag & El-Masry, 2016).

Digital transformation affects all areas of economic activity such as finance, energy, transportation and logistics. While rapidly diffusing technologies play an increasingly predominant role in the organization's operations, existing studies discuss their ways of producing goods and services, interacting with their environment, or exploiting opportunities (Rayna & Striukova, 2016) (Barlatier, 2016). As the entire sectors of the economy undergo profound transformation, However, these disruptions do not affect all firms equally because of differences in technological readiness, organizational capabilities, and strategic orientation condition their ability to adapt. Thus, some disappear and others follow suit (Hirt & Willmott, 2014), while new sectors emerge. The digital revolution impacted large corporations to the extent that startups and agile competitors found ways to transform their businesses. The literature frequently cites this phenomenon as evidence of digital disruption and remains divided on whether incumbents are inherently disadvantaged or whether they can leverage scale, data, and resources to sustain competitive advantage through digital reconfiguration.

In addition, digital transformation, as underlined beyond organizational structure, has also reshaped labor markets and employment relationships. In fact, based on an inventory conducted in 27 countries, Eurofound researchers identify nine new forms of employment (Eurofound, 2018). Some emerged around the 2000s, while others existed previously but have become more common. These new forms of employment entail a shift from face-to-face relationships to virtual relationships and are distinguished based on two axes: The first one is related to the type of relationship between the employer and the employee or the client and the employee whereas the second one concerns the work model, i.e., how the work is performed. We note that such arrangements are often associated with flexibility and innovation. They also raise concerns related to job security, skill polarization, and the long-term sustainability of work models in digitally mediated environments.

Businesses worldwide have been restructured through the transformative power of new technologies and digitization. Some studies report these improvements in efficiency and adaptability (Andal-Ancion et al., 2003; Berman & Dalzell-Payne, 2018). Nevertheless, this transformation is complex. It requires the development and integration of digital innovation in all the areas of activity, from products to organizational processes and business models, with the ultimate goal of accelerating organizational learning, business operations, and creating new ways to deliver value to customers (Lyytinen et al., 2015; Nambisan, Lyytinen, et al., 2017).

The field of marketing lies in the heart of this transition, where knowledge-based information systems are sophisticated tools in the hands of sales personnel enabling evidence-based decision-making in complex situations using artificial intelligence (Stalidis et al., 2015). However, Artificial Intelligence remains irregular and limited in practice which constitute the major gap between technological potential and effective utilization (Wierenga & Soethoudt, 2010). In fact, the full exploitation of AI-driven marketing tools constrains by persistent organizational, cognitive, and educational barriers.

The rise of Big Data led to continuous monitoring of consumer behavior and consumption patterns. The emergence of Big Data generates new strategies to support sales and personalize customer services (Anshari et al., 2019). While personalizing the customer experience is a source of a significant return on investment in terms of sales and revenue growth, the literature also raises implicit

concerns regarding data overload, analytical complexity, and the skills required to translate data insights into strategic action. These concerns explain the benefits of Big Data which are contingent upon firms' analytical maturity and the competencies of marketing professionals.

Customer relationships in the digital world offer great opportunities for growth (Mulhern, 2013). Indeed, as more aspects of daily life converge towards digital platforms, the opportunities for organizations to interact with consumers increase significantly. However, expectations regarding responsiveness, relevance, and ethical data use are Simultaneously raise with additional pressure on marketing professionals to continuously adapt their skills and practices in a rapidly evolving environment.

Parallel to these developments, the pedagogical potential of digital resources challenges the educational process (Tondeur et al., 2016), and particularly, the methods of learning and teaching have been significantly influenced by technological advancements, reshaping pedagogical approaches and challenging traditional educational models (Berrett et al., 2012).

To meet the needs of diverse learners and remain competitive in global education markets, many universities and academies are adopting innovative pedagogical methods based on technology (Stacey & Gerbic, 2008; Garrison & Kanuka, 2004). This response guarantees the alignment between educational innovation and labor market expectations, such as the case of marketing field which is undergoing rapid technological change.

From a strategic perspective, the concept of «transformational marketing, » is predicted to be essential for the future that underscores the crucial impact of academic research, market actions, and societal developments on marketing. This concept is the subject of an analytical framework which discussed the forces that are transforming marketing, expected outcomes, and necessary adaptation measures, while also highlighting emerging research areas (Kumar, 2018).

In addition, the financial worth of different components of marketing suggests adjustments that aim at helping program directors optimize students' return on investment and recommend that marketing instructors must evaluate their marketing educational product in the market, with a focus on its perceived value to employers. The worth is established by the expected salary increase associated with a person's marketing experience and education (Bacon et al., 2023).

Informed by these recommendations for marketing program educational reform in widespread adoption of artificial intelligence, our research seeks to evaluate AI integration in marketing education on students' career optimism and perceived employability.

This work aims to evaluate if and how the integration of artificial intelligence in marketing education influences students' perception of their professional future?", while making assumptions about positive relationships between the integration of AI in marketing training and students' job expectations

3 METHODOLOGY OF THE SURVEY

The marketing environment continues to change with growing velocity by means of technological and societal progress and thus calls for reinventing the marketer over and again in order to remain efficacious and relevant. Their future-mindedness as marketers summarizes the issues as well as possibilities embedded in the future.

3.1 Objective and tools

The core objective of the survey is to determine the influence of recent training based on developments in artificial intelligence by means of discovering and collecting extensive data on the visions and opinions of the third-year students of marketing in Tunisia about their future as marketing professionals.

The information gathered will be employed to give empirical evidence of their career goals, issues, perceived barriers, and expectations of marketing careers, and the marketing job market in Tunisia.

Throughout this empirical investigation, artificial intelligence plays a crucial role in terms of data collection via Google Forms application and data analysis using the IBM SPSS statistical software specialized in big data processing and data mining.

3.2 Choice of the sample:

The survey is intended for third-year marketing students in the Faculty of Economic and Management Sciences of X. All students enrolled in the academic year 2023-2024, a total of 62 students, participated in the survey. We note that these students have likely completed a variety of marketing courses during the years of their study programs that enabling them to acquire basic knowledge and skills related to the field. They should also possess a simple grasp of some of the marketing principles and concepts. They can thus give relevant and useful information concerning the issues addressed in the questionnaire during February and March 2024.

3.3 Variables of interest:

Our questionnaire is based on qualitative variables of interest which can be summarized into three axes, as follows:

Career aspirations: Understanding the specific areas of marketing that students aspire to work in, such as marketing consultant for different companies, specializing in a specific area of marketing (digital marketing, social media marketing, etc.).

Career concerns: Identifying the main concerns or challenges that students face in their future marketing career in Tunisia, such as lack of recognition concerning marketing value, lack of career advancement opportunities and finally lack of resources and budgets allocated to marketing.

Opportunities in the Tunisian market: Assessing students' perception of the professional opportunities available in the Tunisian market for marketing graduates.

3.4 Data analysis method:

To answer our problem, we propose to study the dependencies between two qualitative variables: «professional orientation» which is a nominal qualitative variable with five modalities and «Degree of optimism» as an ordinal qualitative variable that takes five modalities. This analysis will identify the possible perception (optimistic or pessimistic) of future marketers regarding their professional future in the Tunisian context. To achieve this objective, factorial analysis of the data appears as the most appropriate method, allowing to synthesize the information and highlight the structural relationships between the variables studied (Husson & Pagès, 2009).

Data analysis methods are constantly evolving with the increased presence of Big Data. Factorial analysis methods are exploratory data analysis methods based on descriptive statistics and graphical

representations. They can serve predictive statistics, and their main objective is to process a large amount of information to deduce a generalizable behavior (Larose, 2003).

In the following, we apply the method of correspondence factorial analysis (CFA) to understand the structure of the relationship between the degree of optimism and the professional orientation of future marketers. In fact, the CFA is applicable in the case of two qualitative variables organized in a contingency table which is a frequency table obtained by crossing the modalities of the two variables, defined on a population of size N (Husson & Pagès, 2009).

Let:

- Variable 1 has I modalities, with $i = 1 .... I$
- Variable 2 has J modalities, with $j = 1 .... J$
- n_{ij}: the number of individuals having modality i and modality j with $\sum_{i \in I} \sum_{j \in J} n_{ij} = N$ (Saporta, 2005)

The study of associations in the case of qualitative variables, also known as the study of independence, is ensured by conditional probability evaluated through row profiles and column profiles with expressions $\frac{f_{ij}}{f_{i.}}$ and $\frac{f_{ij}}{f_{.j}}$ respectively. Thus, we can conclude that there is:

- Independence between modalities i and j if $\begin{cases} \dfrac{f_{ij}}{f_{i.}} = f_{.j} \\ \dfrac{f_{ij}}{f_{.j}} = f_{i.} \end{cases}$

- Attraction (association) between modalities i and j if $\begin{cases} \dfrac{f_{ij}}{f_{i.}} > f_{.j} \\ \dfrac{f_{ij}}{f_{.j}} > f_{i.} \end{cases}$

- Opposition between modalities i and j if $\begin{cases} \dfrac{f_{ij}}{f_{i.}} < f_{.j} \\ \dfrac{f_{ij}}{f_{.j}} < f_{i.} \end{cases}$

Where:

- $f_{ij} = \dfrac{n_{ij}}{N}$: represents the frequency of modality i and modality j or the joint probability of i and j,

- The frequency of modality i for all modalities j, or simply called the frequency of modality i, denoted by $f_{i.} = \sum_{j=1}^{J} f_{ij}$

- The frequency of modality j for all modalities i, or simply called the frequency of modality j, denoted by $f_{.j} = \sum_{i=1}^{I} f_{ij}$

- $\sum_{i=1}^{I} f_{i.} = \sum_{j=1}^{J} f_{.j} = \sum_{i=1}^{I} \sum_{j=1}^{J} f_{ij} = 1$

In Correspondence Analysis, rows and columns are simultaneously represented through transitional relationships called barycentric properties. These are essential for interpreting data on the axes of the Correspondence Analysis. The first barycentric property establishes that the coordinate of a row on a given axis is calculated as a weighted average of the coordinates of the columns associated with it.

Specifically, if the weight associated with a column is high; its contribution to the calculation of the coordinate of the corresponding row is also high, graphically resulting in the proximity of rows to the columns to which they are strongly associated (Husson & Pagès, 2009). Let consider:

*$F_s(i)$: coordinate of line i on the row axis s

*$F_s(j)$: coordinate of column j on the row axis s

*c_s a constant associated with the row axis s with $1 \leq c_s$

The 1st barycentric property is written as $F_s(i) = c_s \sum_{j \in J} \frac{f_{ij}}{f_{i.}} F_s(j)$

Where $\frac{f_{ij}}{f_{i.}}$ jth element of the profile-line i is the weight associated with each column j. we can say that along the axis of row s, line i is at the center of all the columns (weighted average). If the weight j ($\frac{f_{ij}}{f_{i.}}$) is high then the coordinate of column j counts a lot in calculating the coordinate of row i.

The second barycentric property, obtained by swapping the roles of rows and columns, states that the coordinate of a column on an axis of a given rank is similarly calculated to the first property, but this time considering the weights associated with the rows. Thus, a column is close to the rows to which it is strongly associated (Husson & Pagès, 2009).

The 2nd barycentric property is obtained by permuting the role played by the rows and columns, one obtains the 2nd barycentric property:

$$F_s(j) = c_s \sum_{j \in J} \frac{f_{ij}}{f_{.j}} F_s(i)$$

By granting a weight of $\frac{f_{ij}}{f_{.j}}$ ith element of the profile- column j, column j is at the barycenter of all lines on row axis s. plus the weight granted « $\frac{f_{ij}}{f_{.j}}$ » at the ith element of the profile- column j is high, so the coordinate of i counts more in the calculation than that of column j.

The relationship between variables is reflected in a deviation from independence, geometrically interpreted as variance of points from the origin. The further the data deviates from independence, the more the profiles diverge from the origin on the axes of the Correspondence Analysis (Pagès, 2003).

4 EMPIRICAL FINDINGS

4.1 Descriptive Analysis of the sample responses

75.8% of individuals are aged between 21 and 23 years old, while the remaining 24.2% are aged between 24 and 25. There is a predominance of females, representing 74.2% of the sample.

Figure 1 shows a high overall interest among students in marketing as a career, with a majority expressing a level of interest ranging from interested to very interested. This suggests that marketing generates genuine enthusiasm among students, perhaps due to the increasing importance of marketing in the world. Only a small proportion of students, 4.8%, state to be neutral, indicating that the majority have a rather positive opinion of marketing as a potential career.
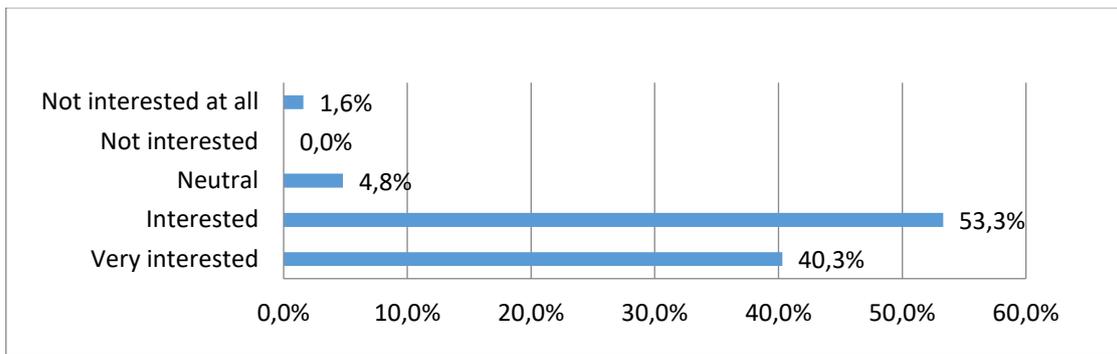
Figure 1: Level of interest in marketing as a career

However, the level of attraction to marketing can be justified by the perception of employment opportunities in Tunisia. Indeed, Figure 2 reflects the fact that the job market for marketers in Tunisia presents challenges but also opportunities, indicating a varied and evolving work environment.
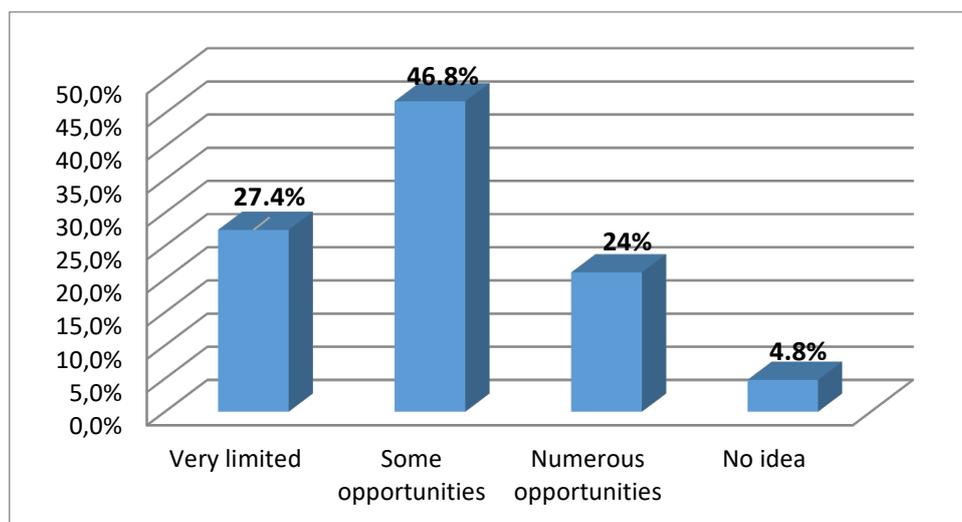

Figure 2: Perception of employment opportunities

Nearly half of the students (46.8%) believe that there are career prospects for marketers in Tunisia. However, about a quarter of students (27.4%) consider these opportunities to be too limited. Conversely, a significant proportion of students (24%) firmly believe in the existence of many opportunities in this field. Only a small percentage of students (4.8%) admit to being unsure how to interpret the situation.

According to the students' responses, we can rank, in descending order of importance, the sectors that offer the best opportunities for marketers in Tunisia, such as communication and media, the commercial sector, the technology sector, tourism, and hospitality.

Future marketers are full of ambition and enthusiasm to work, especially in Tunisia, and contribute to the growth of the national economy through various aspirations. 29% of students aim to specialize in a specific area of marketing, such as digital marketing or social media. Next, 25.8% of the study population plan to establish their own marketing agency in Tunisia. 12.9% of student responses indicate an intention to work as marketing consultants for various Tunisian companies, while 11.3% aim for managerial positions in renowned companies in Tunisia.

However, the 21% of students who aim to work abroad, where they believe there are more opportunities, explain their choice by the challenges faced as marketers, mainly the lack of recognition of marketing value, limitations in career advancement, lack of resources and budgets

allocated to marketing, and also the difficulty in obtaining specialized marketing training in Tunisia to help them excel in this field .

4.2 Factorial Analysis of the Relationship between Degree of Optimism and Professional Orientation:

The professional orientation variable holds a number of various modalities, and some of the options vary between working in Tunisia, job creation, profession as a consultant, specialization in a particular field, or seeking opportunities elsewhere. Conversely, the optimism degree variable includes a continuum of attitudes from "Very optimistic" to "Very pessimistic," with an intermediary such as "Rather optimistic," "Neutral," and "Rather pessimistic." This scale captures the continuum of variation in the attitudes of the people for their career future and their optimism regarding overcoming probable problems. The two variables are placed in a contingency table, where "Professional orientation" is placed in columns and "Degree of optimism" placed in rows.

The Correspondence Analysis will define a rows and columns typology on a principal plane and compare their similarity by studying the relationships between them according to row profiles and column profiles in the following table structure:

Table 1: Row profiles and column profiles

Row Profiles

Professional orientation	Degree of optimism					
	Very optimistic	Rather optimistic	Neutral	Rather pessimistic	Very pessimistic	Active margin
Working in Tunisia	,286	,714	,000	,000	,000	1,000
Creating employment	,375	,438	,125	,063	,000	1,000
Consultant	,125	,250	,125	,375	,125	1,000
Specialization	,111	,389	,167	,167	,167	1,000
Working abroad	,231	,538	,231	,000	,000	1,000
Masse	,226	,452	,145	,113	,065	

column Profiles

Professional orientation	Degree of optimism					
	Very optimistic	Rather optimistic	Neutral	Rather pessimistic	Very pessimistic	Masse
Working in Tunisia	,143	,179	,000	,000	,000	,113
Creating employment	,429	,250	,222	,143	,000	,258
Consultant	,071	,071	,111	,429	,250	,129
Specialization	,143	,250	,333	,429	,750	,290
Working abroad	,214	,250	,333	,000	,000	,210
Active margin	1,000	1,000	1,000	1,000	1,000	

The below table indicates the correlation between the modalities of degree of optimism variable on one side, and the Future Orientation variable on the other side. The following correlation can be seen:

• Very optimistic attitude goes hand in hand with job creation: Student respondents who are extremely optimistic not only dream of career opportunities as marketing professionals in Tunisia but also hope to start their own marketing firms in Tunisia. These students are driven by an aspiration and business-mindedness to capitalize on opportunities availed by the Tunisian market and become value additions to the country's marketing sector. They believe more than failure in the future and stand ready to turn troubles into opportunities, drawing back to their passion and devotion for innovation and national economic growth.

•Students with a relatively high optimism level are highly inclined towards business opportunities in Tunisia. They have the vision of the market potential of Tunisia and are optimistic that they can considerably contribute to its development using their marketing expertise. Such students are driven by the feeling of belongingness to the country and would like to positively contribute towards its economic growth. They consider Tunisia as fertile ground for the sale of innovation and entrepreneurship, and they are keen on making the most of the potential of the internal market. Through settling in Tunisia, they are being patriotic to the nation and society, as well as expecting to advance their professional ambitions in a working environment that is innovative and creative and conducive to personal fulfillment.

•Students with a neutral mindset are attracted to international professional opportunities. They think about their vocation in a global context, attracted to diversity of ideas, cultures, and markets. International employment allows them to open up new horizons, learn intercultural skills, and face tough professional challenges. Such students embrace the challenge of the international market and are willing to adapt to multicultural working cultures. They view this international experience as a chance to expand their professional network, improve their professional competence, and enhance their professional life. In opting to work abroad, they are realizing their aspiration to gain new insights and expand their professional frontiers beyond the homeland.

• Somewhat discouraged by career prospects in Tunisia students opt for a career as consultants. They don't seem to find the Tunisian market easy to work with and, in a pragmatic sense, seek to offer their services in a consultative nature. Such students view the profession of a consultant as an opportunity to utilize their marketing knowledge without having the risks and limitations of entrepreneurship or the conventional employment in Tunisia. By this avenue, they target providing innovative solutions and strategic guidance to Tunisian businesses, thus helping them enhance their development and competitiveness in the domestic market and potentially global market. For such students, consultancy work provides a chance to address professional issues while playing a significant role in the economic development of the nation.

•   Students who are highly pessimistic are inclined to specialize in social media marketing. Being well aware of the economic restriction and limitation in the Tunisian market, such students realize the increasing significance of using social media in marketing. They consider such specialization an opportunity to distinguish themselves in the changing business environment, where companies make a special effort to create their web presence and interact with their customers by means of the internet media. Such students consider social media marketing as a suitable method of working out the shortcomings of the traditional market and offering products and services in a new and accessible manner. By specializing in this niche area, they aim to build cutting-edge expertise in marketing using social media, hence highly sought-after specialists in a highly dynamic professional industry.

These are high dependencies as proved graphically in the graph (Fig.3). In fact, applying the barycentric characteristics, the closeness of modalities on the factorial plane mirrors these correspondences. Lines that have similar association with all columns are said to be close, whereas lines with opposite association are said to be far. This closeness or distance is represented graphically with reference to the origin, referred to as the zone of independence, which quantifies the level of association between lines and columns.
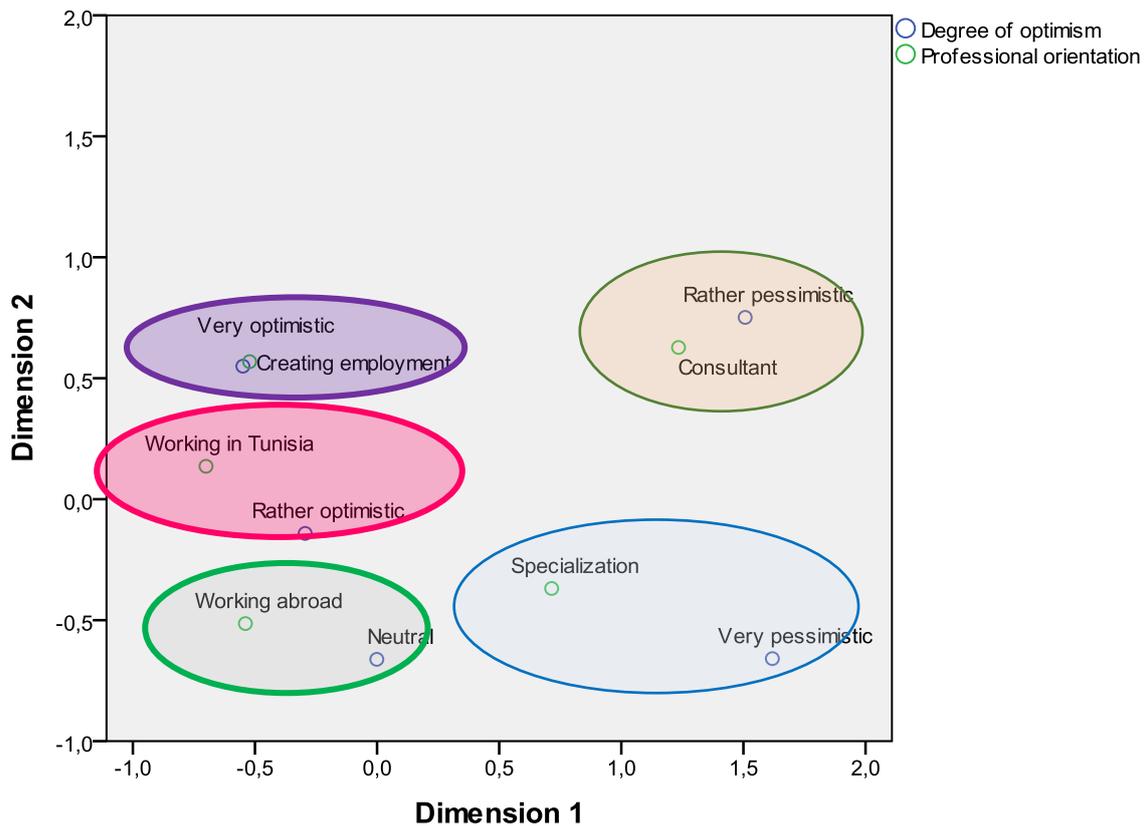
Figure 3: Graphical representation of the factorial plane

5 DISCUSSION

The analysis of correspondences generated results that confirm the existence of a significant relationship between the degree of optimism of marketing students and their future professional orientation. This relationship is fully part of the literature on psychological and contextual determinants of career choices, according to which subjective representations of the future strongly influence professional intentions, especially in unstable or rapidly changing economic environments.

we note that the observed association between a very high level of optimism and the orientation towards business creation is well supported by the work of Kane et al. (2017) which states that digital transformation promotes the emergence of new economic models and opens up entrepreneurial opportunities, particularly in the data-intensive sectors and digital technologies. The integration of artificial intelligence in marketing in addition to advanced analytics and social media creates conditions which conduct to innovation, encouraging the most confident and optimistic profiles to consider self-employment as a credible career path. These results also corroborate the analyses by Rayna and Striukova (2016), according to which digital technologies reduce barriers to entry and stimulate entrepreneurship, particularly in emerging economies.

Students with high, but more moderate optimism prefer a professional career in Tunisia. This orientation is consistent with the work of Fitzgerald et al. (2014), which shows that digitalization allows existing organizations to improve their competitiveness and create new internal opportunities. Students have a positive perception of the Tunisian market that reflets confidence in the ability of local businesses to adapt to digital transformations. Moreover, this local orientation meets the analyses of Keding (2021), which emphasize that digital transformation relies not only on technology,

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but also on the development of human and organizational skills, strengthening the employability of young graduates on national markets.

Conversely, the attraction of neutral students for international opportunities is part of the dynamics described by Eurofound (2020). The work of Rimbau-Gilabert and Pasamar (2021) underline that the emergence of new forms of employment characterized by mobility, work virtualization and career internationalization. in line with the work of Hirt and Willmott (2014) on the reshaping of economic sectors under the effect of digitalization, these new forms reflect a strategy of adaptation to uncertainty while considering the international as a space for learning, of diversification of skills and accumulation of professional capital.

Students displaying a certain pessimism about the local market tend to orient themselves towards consulting, which echoes the analysis of Lyytinen et al. (2015) according to which digital transformation promotes more flexible forms of work, based on expertise and the provision of high value-added services. Students opt for the choice of consultancy, as a rational response to the perceived constraints of the Tunisian market. This choice allows the mobilization of skills in marketing, data analysis and digital strategy, while it limits exposure to entrepreneurial risk.

students' awareness that Big Data and digital platforms are keys to redefining marketing skills, is well manifested by the association between a high level of pessimism and a specialization in social media marketing. in fact, Amado et al. (2018) and Anshari et al. (2019) emphasize that the exploitation of data from social networks and digital interactions today constitutes a major lever for differentiation and employability.

In this context, specialization appears as a professional security strategy, allowing students to fit into niches with high demand, regardless of the structural limits of the local market.

Finally, these results highlight the central role of marketing training devices in building optimism and professional projects. As confirmed by Tondeur et al. (2016), the integration of digital technologies and artificial intelligence into educational practices affects several facets such as promoton of student engagement, trust, and professional projection. The conclusions of Kumar (2018) on "transformational marketing" find an empirical echo here, insofar as students trained in the tools and logics of digital marketing develop more diversified and resilient professional trajectories.

Ultimately, this study confirms that professional optimism, nourished by training programs adapted to the requirements of digital transformation, is a key factor in career guidance for future marketing professionals.

6 CONCLUSION

The field of marketing is strongly influenced by the rise of artificial intelligence. In response to this evolution, many educational institutions are revising their training programs and adopting innovative pedagogical approaches to adapt to the diversified needs of students and maintain their competitiveness in the global education and employment market. The objective of the empirical study, conducted with future marketing professionals in Tunisia, is to evaluate the impact of new teaching methods and programs on their level of optimism, confidence in their training, and ability to create innovative job opportunities based on artificial intelligence tools. The impact of updated educational programs on this relationship between optimism and professional orientation is noteworthy. Educational programs that encourage the development of leadership skills, entrepreneurship, and resilience in the face of professional challenges can reinforce individuals'

optimism and thus positively influence their professional orientation and impact career decisions and behaviors. Additionally, regarding the attraction to a career in marketing, most students show a strong interest, indicating a general enthusiasm for this sector. However, this interest in marketing is also conditioned by the perception of job opportunities in Tunisia. The majorities of students are convinced by the existence of career prospects for marketing professionals in the country and firmly believe that a large number of opportunities are available, despite obstacles such as lack of recognition for marketing, limitations in career advancement, budgetary constraints, and difficulties in accessing specialized training in Tunisia, marketing students have varied career aspirations.

Correspondence Analysis indicates strong connections between the students' optimism level and their future career choices as marketers in marketing. Indeed, optimistic students firmly see themselves as entrepreneurs by developing their own marketing companies in Tunisia, while professional marketing career choices in the country are made by highly optimistic students. On the other hand, international professional prospects appeal to neutral students, and pessimistic students opt for being a marketing consultant or learning social media marketing. These are marked by high interest, confidence, and strong motivation.

Tunisian students have an optimistic view of their future as marketers in Tunisia, disregarding the concept of unemployment. They are convinced that their enriching training will enable them to create and enhance job opportunities. Despite limited resources, the field of digital marketing and media appears as a promising path for the future of marketing professionals in Tunisia.

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