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Technological innovation as a catalyst for change in organizational culture: Case of Moroccan SMEs.

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Abstract:

A This research investigates the impact of technological innovation adoption on the organizational culture of Small and Medium-sized Enterprises (SMEs) in Morocco. The central research question explores how the adoption of technological innovation influences cultural dynamics within Moroccan SMEs. Employing a questionnaire-based methodology with 183 responses, the study aims to shed light on the intricate relationship between technological innovation and organizational culture in the context of Moroccan SMEs.

The study reveals two key findings. Firstly, it is observed that the adoption of technological innovation serves as a robust driver to stimulate a culture of efficiency within the surveyed SMEs. Secondly, the research underscores the emergence of tensions within Moroccan SMEs arising from resistance to technological change.

However, the principal limitation of this study is the restricted number of respondents, which may limit the generalizability of our findings to the broader landscape of Moroccan SMEs. Despite this limitation, the insights gleaned offer valuable perspectives and a foundation for future research to further explore the nuanced interplay between technological innovation and organizational culture in Moroccan SMEs.

In summary, this study contributes valuable insights into the nexus between technological innovation and organizational culture within Moroccan SMEs. The findings underscore the dual nature of this relationship, acting as both a catalyst for efficiency-driven cultural enhancement and a source of tension due to resistance to change. The implications of these findings extend beyond the confines of individual SMEs, offering guidance for policymakers, industry practitioners, and scholars seeking to understand and facilitate the positive integration of technological innovation in diverse organizational settings.

Keywords: Technological innovation; Organizational culture; Moroccan SMEs.

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Abbreviations:

Abbreviation	Signification
SMEs	Small & Medium sized Enterprises.
ICT	Information &Communication Technologies.
GDP	Gross Domestic Product.
UTAT	Unified Theory of Acceptance & Use of Technology.
TAM	Technology Acceptance Model.
RBV	Resource-Based View.
STS	Socio-Technical Systems Theory.

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1. Introduction:

Research subject:

Morocco, as a developing country, faces significant challenges in terms of economic competitiveness in an ever-evolving global context. The era of globalization and digital transformation has altered the business landscape, demanding that Moroccan companies in general, and small & medium enterprises especially, adapt swiftly to remain competitive in international markets. At the core of this adaptation lies technological innovation, an essential element for the survival and growth of organizations. However, the impact of technological innovation extends beyond improving products or processes; it also instigates profound transformations in organizational culture.

This study draws on established theories, specifically the Diffusion of Innovation Theory, Organizational Culture, and the Unified Theory of Acceptance and Use of Technology model. These theoretical frameworks will inform our exploration of the intricate relationship between technological innovation and shifts in corporate culture within Moroccan SMEs.

Organizational culture, defined as the set of values, norms, beliefs, and behaviors shared within an organization, plays a fundamental role in how a company approaches innovation and adapts to changes. Moroccan organizations, striving for competitiveness on the global stage, must not only adopt new technologies but also transform their culture to foster the agility, creativity, and collaboration necessary for successful innovation.

From this, our research investigates the nexus between the adoption of technological innovations and organizational culture within the Moroccan business landscape, aiming to uncover the dynamics and influences shaping successful integration and adaptation processes.

Research objective:

The objective of this study is to delve deeply into the relationship between technological innovation and changes in corporate culture in Moroccan small and medium enterprises. We will explore the mechanisms through which technological innovation influences organizational culture of Moroccan SMEs, highlighting the specific challenges and opportunities encountered by them in this process of change. By closely examining these interactions, we aim to identify patterns, trends, and best practices that can guide decision-makers, business leaders, and researchers interested in organizational transformation within a Moroccan context.

In this context, this research aligns with efforts to understand how Moroccan SMEs can leverage technological innovation to enhance their competitiveness and resilience. It also contributes to the poor literature on cultural change within Moroccan organizations, shedding specific light on the role of technological innovation as a catalyst for this transformation.

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Research plan:

Our research plan unfolds in two key parts: firstly, a comprehensive "Literature Review and Hypothesis Development" where we provide conceptual clarifications, conduct an empirical review, and develop hypotheses based on the aforementioned theories. Subsequently, our second part elucidates the methodological process, encompassing the development of variables. Following this, we present our findings and engage in a discussion before culminating in the conclusion of our work.

Methodological choice:

In designing our questionnaire, we adopt a positivist epistemological position, emphasizing the objective and measurable nature of social phenomena. Our methodological choice aligns with a deductive reasoning mode, as we formulate hypotheses based on existing theories and literature, seek to test them through structured and standardized survey instruments. The questionnaire is meticulously crafted to ensure reliability and validity, employing closed-ended and yes/no questions to facilitate quantitative data collection. The analysis of the data, grounded in statistical techniques, aims to provide empirical evidence that contributes to the body of knowledge in our field. By bridging the gap between theory and practice, our study endeavors to make a meaningful impact on both academic discourse and real-world applications.

Problematic:

How does the adoption of technological innovation influence SMEs culture in Morocco?

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1. Literature Review and Hypothesis Development:

1.1 Conceptual Clarifications:

Definition of technological innovation:

Technological innovation can be defined as a dynamic process involving the introduction, diffusion, and adoption of new technologies, production methods, products, or services within an organization or economy (Rogers, 1995).

As posited by Schumpeter in 1942, "Innovation is a creative destruction that incessantly revolutionizes the internal structure of a company, continuously destroying its old elements and continuously creating new elements". According to his innovation model, Schumpeter advances that technological innovation can manifest in various forms, such as product innovation, process innovation, organizational innovation, and market innovation.

According to Damanpour F. (1996), innovation can be defined as a process that includes the generation, development, and implementation of new ideas or behaviors. Moreover, innovation is conceived as a means of changing an organization, either as a response to changes in the external environment or as a pre-emptive action to influence the environment. Hence innovation is here broadly defined to encompass a range of types, including new products or services, new process technologies, new organizational structures or administrative systems, or new plans or programs pertaining to organizational members.

In Morocco, technological innovation has become a strategic priority, notably with the “2014-2020 Industrial Acceleration Plan”[1], aimed at enhancing the competitiveness of Moroccan companies through the adoption of advanced technologies. Emphasis is often placed on the adoption of Information and Communication Technologies (ICT), production process automation, and the development of innovative products to increase competitiveness of Moroccan companies in international markets.

Organizational Culture: A Polysemous Concept;

The concept of organizational culture has brought a significant amount of research since the 1980s. Before the concept appears in the literature, the concept of organizational climate was popular in the management and organizational literature in the 1960s, and 1970s. The terms culture and climate were used mutually until the theory of organizational culture established itself as a distinctive field of research which defines organizational culture as: values, beliefs, assumptions, myths, norms, and goals that are widely accepted in organizations (G. Hofstede 2001).

[1] A Moroccan strategic initiative adopted over 2014-2020 period.

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Thus, we can retain the most commonly used definition in the literature, that of Schein "The pattern of basic assumptions that a given group has invented, discovered or developed in learning to cope with its problems of external adaptation and integration that have worked well enough to be considered valid, and therefore to be taught to new members as the correct way to perceive, think and feel in relation to those problems" (Schein, 1985). It shapes how employees interact with each other, make decisions, solve problems, and perceive their role within the company.

In Morocco, the most dominant values impacting the culture are, externally, quality, customer satisfaction, and, to some extent, innovation. And internally, there exists a coexistence of a formal communication system centered at the top of the hierarchy, and an informal one that holds significant ground in certain SMEs (A & N. Amine, 2016).

Impact of Technological Innovation on SMEs Organizational Culture:

Small and Medium Enterprises (SMEs)[2] are a vital pillar of the Moroccan economy. According to the World Bank, in an article published on the united nation website[3] on 09 may 2023, it is estimated that SMEs account for more than 90 percent of all Moroccan enterprises, contributing to over 20 percent to the Gross Domestic Product (GDP) and to 21.6 percent of total employment. Due to this importance, the impact of technological innovation on SMEs organizational culture can be substantial and can touch the whole of business landscape.

Technological Innovation has the potential to stimulate creativity, agility, and collaboration within Moroccan organizations, thereby fostering a corporate culture more focused on innovation (Birkinshaw et al., 2008). However, it can also lead to tensions and resistance to change, especially when employees perceive threats to job security or their existing skills (Zwick T. 2000).

In Morocco, the necessity of combining technological innovation with cultural changes to remain competitive is increasingly acknowledged. Moroccan SMEs must not only adopt new technologies but also develop a culture that encourages continuous learning, calculated risk-taking, and cross-functional collaboration.

These theoretical concepts provide an essential framework for understanding how technological innovation can act as a catalyst for changing the corporate culture in Morocco. They will serve as the basis for analyzing and discussing the results of our study.

1.2. Mobilized theoretical framework:

[2] We take the official definition of Small and Medium Enterprises in Moroccan law N° 53-00 establishing the Charter for Small and Medium Enterprises.
[3] Official United Nation website consulted the 9th December 2023.

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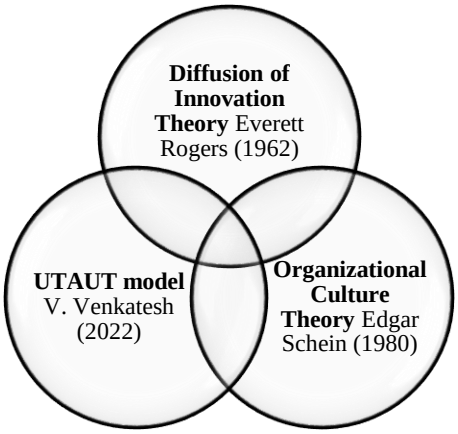
This research constitutes an integrative analysis, amalgamating the foundational theoretical frameworks of the **Diffusion of Innovation Theory** as formulated by Rogers (1962), **Organizational Culture Theory** articulated by Schein (1985), and the **Unified Theory of Acceptance and Use of Technology (UTAUT)** model proposed and unified by V. Venkatesh (2022) based on the development observed in the Technological Acceptance Model (TAM) model from its initial phase developed by Davis (1993) to its third phase. The objective is to comprehensively elucidate the intricate dynamics inherent in the adoption of innovation within organizational culture contexts.

Figure N°1: simplification of theorical framework.



Source: authors.

Rogers' theory provides an in-depth exploration of the diffusion process, emphasizing adopters' characteristics, innovation attributes, and communication channels, shedding light on how innovations permeate a social system. Schein's theory delves into the significant impact of organizational culture on the acceptance and incorporation of innovations, emphasizing the fundamental role of shared values, assumptions, and behaviors within organizational settings. Complementary to these, the UTAUT model consolidates various determinants of technology acceptance, encompassing performance expectancy, effort expectancy, social influence, and facilitating conditions, offering a comprehensive and integrated perspective on factors shaping the adoption of innovations.

This integrated approach endeavors to offer a comprehensive examination of the interconnected relationships between innovation diffusion, organizational culture, and technology acceptance, seeking to provide a deeper understanding of their collective influence on successful innovation adoption and implementation within organizational settings. By synthesizing these influential theories, the study aims to unveil the intricate interactions among these elements, providing

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valuable insights into effective strategies for facilitating innovation adoption, managing cultural change, and implementing new technologies within organizational structures.

The ultimate goal is to contribute to a more comprehensive and holistic understanding of the multifaceted elements that drive innovation adoption processes. This, in turn, leads practices and strategies to foster a culture of innovation within organizations and optimizing the successful implementation of new technologies.

1.3. Empirical Review and Development of Hypotheses:

The corpus of literature examining the impact of organizational culture on technological innovation and its adoption is indeed vast and robust. However, there remains a noticeable disparity in the attention given to the reciprocal relationship: the influence of technological innovation on organizational culture and the resultant changes it instigates. While numerous studies delve into how the prevailing culture within an organization can either facilitate or impede technological innovation, a relative paucity exists in addressing how the introduction and integration of novel technologies subsequently transform and reshape the cultural fabric of an organization. Understanding this bidirectional relationship -how technological innovation not only responds to but also actively shapes organizational culture- stands as an important area warranting further scholarly exploration within the field.

However, despite this scarcity of literature exploring the inverse dynamic, our research has diligently investigated deeper into this domain. This endeavor involved a thorough analysis of academic publications, leading to the identification and curation of relevant studies. These findings are compiled in the following table, providing a foundation for formulating hypotheses that illuminate the relationship between technological innovation and the evolution of organizational culture.

Table N°1: Precedent findings' recap.

Title	**Author (s)**	**Conclusions**
"The impact of technological innovation on organizational performance"	Adeyeye Tolulope Charles (2014)	Based on principal finding of this study, it was recommended that there is the need for organizations to be innovative technologically to be competitive in the market. And companies should train their employee for better efficiency and effectiveness.
"Technological innovation, organizational	Arman Avadikyan, Stéphane	The main result of this study propose that process innovation is positively linked to the breadth of service surrounding products, whereas

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change, and product-related services"	Lhuillery & Syoum Negassi (2016)	organizational innovation is more prone to lead to a larger breadth of services surrounding customer offerings.
"The impact of technological innovation on corporate performance: Evidence from the communication and cultural industry in China"	Maoguo Wu & Nan Gu (2018)	Results show that technological innovation has a positive impact on the corporate performance of listed companies in the communication and cultural industry.
"The impact of technological innovation on production"	O. S. I. Fayomi J.O Adelakun & K.O. Babaremu (2019)	The deficiencies in production have gradually been combated but it was discovered that innovation from technological bearing has played a significant role in the productivity outcomes of most production processes.
"Innovation culture and management in Moroccan companies"	Mahmoud Watad (2022)	The main finding of this study is that adopting an innovation culture appears to be a disconnect between top management and other layers of managers. This disconnect may cause a laid-back attitude among employees which in return, diminishes the organizational ability to innovate effectively. This disconnect also diminishes an organization's ability to get things done in a timely fashion.
"Technological innovation, risk-taking and firm performance— empirical evidence from Chinese listed companies"	Hui Zhang & Vesarach Aumeboonsuke (2022)	Technological innovation has a significantly stronger negative impact on the performance of non-state-owned enterprises.

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"The impact of digital transformation on human capital practices and development"	Zouhair EL ARHLABI (2023)	The findings of this study show that digitalization is the key to enable subordinates to interact with all members of the organization, provide real-time information, reduce costs and expenses and facilitate coordination and communication, influencing the development of human capital, and facilitates the evaluation of employees and employee productivity.

source: authors.

Based on these findings, our hypotheses are crafted and formulated to scrutinize and extend these findings specifically within the context of Moroccan SMEs. Below are the formulations of these hypotheses.

Hypothesis (H1): The adoption of technological innovation strengthens the culture of efficiency within SMEs in Morocco. This hypothesis suggests that companies integrating modern technologies are more likely to emphasize efficiency, productivity, and time management.

Hypothesis (H2): The adoption of technological innovation creates tensions within the SMEs culture in Morocco due to resistance to change. This hypothesis suggests that the introduction of new technologies can lead to conflicts and resistance among employees or within certain sectors of the company.

Hypothesis (H3): The adoption of technological innovation positively influences the SMEs culture in Morocco while promoting internal collaboration and communication. This hypothesis assumes that new technologies enhance communication among employees and teams, reinforcing the work culture without necessarily accentuating resistance to change.

1. Methodology:

Operationalization of variables and instruments of measurement:

In accordance with the objective of our research, which aims at providing a comprehensive answer to our problematic issue and aligning with the formulation of our hypotheses, we have opted for a qualitative method (questionnaire) to collect data. Each question in the questionnaire corresponds to a measurement item, drawn from the literature, pertaining to one of our two independent variables (culture of efficiency & Organizational tensions). Variables extrapolated from the literature and empirical review, already presented, and judged inducing changes on our chosen dependent variable (the influence of technological innovation on Moroccan SMEs culture) deemed aligned with the research objective.

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Below is a detailed presentation of each item, its theoretical underpinning, and the formulation of the corresponding question in the questionnaire.

Independent variable: Culture of efficiency.

- Company productivity and efficiency.

The **Technology Acceptance Model (TAM)**, developed by Davis in the 1980s and later expanded by Venkatesh, is used to understand how users come to accept and use a new technology, according to this model when companies successfully integrate new technologies that are perceived as useful and easy to use, it can lead to enhanced productivity. The item presented in our questionnaire takes in the following form:

« To what extent has the adoption of new technologies increased the productivity and efficiency of your company? ».

This item is measured by a range of five response scales proposed, ranging from 'extreme' to 'none'.

- Level of time management efficiency.

One of the theoretical frameworks that relates to the level of time management efficiency and technological innovation integration is the **Resource-Based View (RBV)** developed by Barney (1991). The RBV is a management theory that suggests a firm's competitive advantage and performance are driven by its unique resources and capabilities. Technological innovation, such as the implementation of new tools or software aiming at improving time management, also constitutes a resource within the RBV framework.

Item, measured by a range of five response scales proposed, ranging from 'Very effective' to 'Not effective at all', expressed by:

« How do you assess time management within your company since the adoption of new technologies? ».

- Improvement in work quality.

The **Socio-Technical Systems Theory (STS)** advanced by E. Trist and K. Bamforth (1951) emphasizes the interaction between people and technology in the workplace. It asserts that work quality is influenced not only by technological advancements but also by the social and organizational context in which technology is implemented.

« Have technological innovations resulted an improvement in the quality of work within your company? ».

Binary item for which the response will be either 'yes', indicating the existence of a noticeable improvement after the adoption of new technologies, or 'no' for its absence.

- Simplification of the work process.

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STS advocates for the use of technology to simplify work processes, making them more efficient and reducing unnecessary complexities. This involves designing systems that are easy to use and understand for the workforce.

«To what extent have new technologies simplified work processes within your company? ».

Item measured by a range of five response scales proposed, ranging from 'extreme' to 'none'.

Independent variable: Organizational tensions (resistance to change).

- Change resistance;

The introduction of new technologies may provoke resistance to change among staff due to fear of the unknown and potential disruptions in established routines. **Change Management Model** Lewin(1950s) addresses showing resistance to change by unfreezing the current state, overcoming resistance, and solidifying change by implementing new technologies within the enterprise (S. Hussain, et al, 2018).

«Have you observed any resistance to change within your company since the adoption of new technologies? ».

Binary item for which the response 'yes' stands for conveying the presence of resistance to changes resulting from the adoption of new technologies, and 'no' for expressing its absence.

- Concerns regarding job security

The adoption of new technology within the framework of the **Technology Acceptance Model (TAM)** can, in its turn, create insecurities among employees about their work by potentially altering their perceptions of job security and the ease of integrating these innovations into their roles.

« Have technological changes raised concerns among employees regarding job security? ».

A binary item composed of 'yes' or 'no' answers, according to the perception of concerns regarding job security among the responding employees.

- Disagreements among employees regarding the adoption of new technologies

The **Technology Acceptance Model (TAM)** addresses disagreements among employees by focusing on individual perceptions of the usefulness and ease of use of new technologies, which can vary, influencing their acceptance or rejection of the innovations, potentially leading to internal conflicts or differing opinions within the organization.

« Have you noticed any conflicts or disagreements among teams or employees regarding the adoption of new technologies? ».

A 'yes' or 'no' question, measuring the item relevant to the existence or absence of conflicts or disagreements among teams or employees regarding the adoption of new technologies.

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- Employees awareness and readiness to deal with change resulting from the adoption of new technologies.

The **theory of organizational readiness for change** (Weiner, 2009) emphasized the importance of building organizational readiness for change and recommended various strategies to create organizational readiness for change.

«Have employees felt adequately informed and prepared to cope with technological changes within the company? ».

Item measured by a range of five response scales proposed, ranging from 'Very well prepared' to 'Not at all prepared'.

Sampling and Data Collection:

Our research methodology undertaken to investigate the influence of technological innovation as a catalyst of change in organizational culture within the Moroccan context involved a structured approach towards sampling and data collection. A questionnaire comprising eight meticulously designed questions was utilized as the main tool for our data acquisition. This methodological choice was grounded in its efficacy to gather diverse insights while maintaining a standardized format for analysis.

The sample size was constituted by collecting 183 responses from a targeted audience, predominantly sourced from the professional core of the website lesalarie.ma[4]. Leveraging the extensive email database provided by this reputable platform, containing a repository of 3000 email addresses of employees across varied enterprises operating in distinct sectors of activities within the Moroccan territory, facilitated the outreach and engagement process.

Efforts were earnestly invested in reaching out to this professional cohort, ensuring the representation of a broad spectrum of perspectives and experiences. The diversified nature of the sectors of activities represented within the sample aimed to capture a holistic understanding of the impact of technological innovation on organizational culture across various SMEs in the Moroccan landscape, and enriches the representativeness and reliability of our study, ensuring a nuanced and robust understanding of our phenomenon.

Strategic selection of lesalarie.ma's database allowed for a purposive and targeted approach, aligning with the research objective to comprehensively explore the relationship between technological advancement and the evolution of SMEs culture within the Moroccan context.

In the first time, we have started by eliminating generic addresses from the database. This first phase has allowed us to reduce the initial gross base of the site by 3000 to 1878 addresses.

[4] Job, Internship, and Coaching Opportunities Platform in Morocco: https://lesalarie.ma/

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In the second time, through meticulous curation and rigorous criteria application, this "middle" database comprising 1878 addresses has been judiciously refined to a focused cohort of 843, systematically excluding addresses relevant to entities that do not align with the Small and Medium Enterprise (SME) classification. This targeted reduction ensures a more streamlined and relevant dataset, facilitating a precise examination of SME-specific characteristics and contributing to the overall precision of the research analysis.

In the third time, a stratification[5] phase was conducted by grouping email addresses according to their respective regions (cities where implanted each company). This stratification sampling method was then applied within each regional stratum, thus ensuring geographic variability and maintain of representability of our reduced sample. For the sake of simplicity and feasibility, we deemed it appropriate to further narrow down our targeted base, by conserving only one-third of every regional stratum. This phase permeates, in final stage, to reduce our population to a sample of 281 individuals to be surveyed. By adopting this approach, we aim to have a significant geographical diversification, providing a more holistic perspective on responses and experiences within the studied population.

The questionnaire distribution to the selected addresses, and subsequent data collection process were conducted with careful consideration of ethical standards and data integrity. Measures were implemented to ensure the anonymity of participants and the confidentiality of their responses, thereby fostering an environment conducive to candid and authentic feedback.

The resultant dataset of 183 responses signifies a substantial foundation for analysis, providing a meaningful and diverse collection of perspectives from professionals immersed in the dynamic organizational ecosystems of Moroccan SMEs across various sectors over the whole territory.

This meticulously curated sampling process, driven by a strategic selection of participants and a well-structured questionnaire, aimed to provide a robust foundation for the empirical examination of the relationship between technological innovation and the transformative dynamics of organizational culture in the Moroccan SMEs, the analysis of these responses will form the basis for the development of the following sections.

[5] In sampling, stratification refers to the process of dividing a population into homogeneous subgroups, or strata, based on certain characteristics shared by the individuals within each subgroup.

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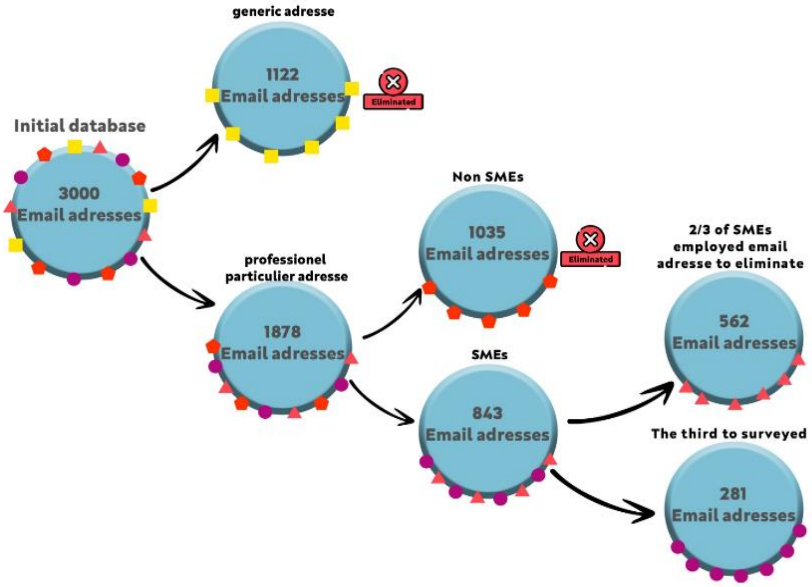
Figure N°2: Simplification of sampling process;



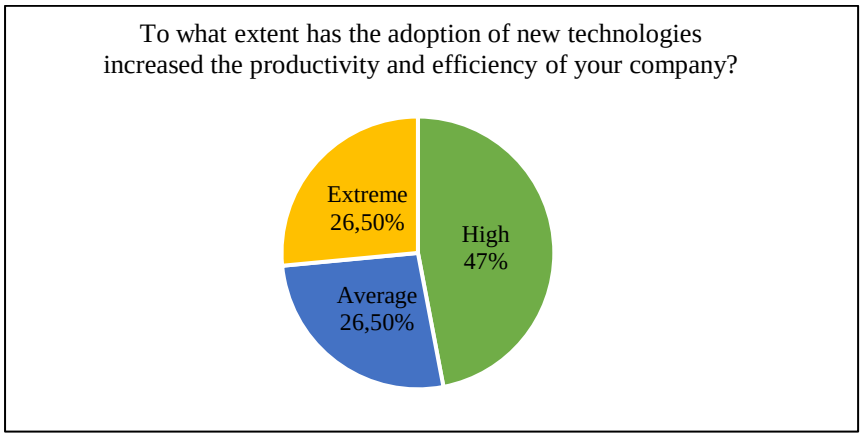
Source: Authors

3. Results analysis and discussion.

3.1. Presentation of results.

In this section, we shall present the results obtained from the respondents. Following the same order as that of the questionnaire formulation, that allowed the collection of these results.

Figure N° 2: Results presentation of Q.N°1.



Source: Authors.

For this first question, treating the company productivity and efficiency, the responses reveal that 47% of the respondents believe that the adoption of new technologies within their companies has highly contributed to improving efficiency and productivity in the latter. The

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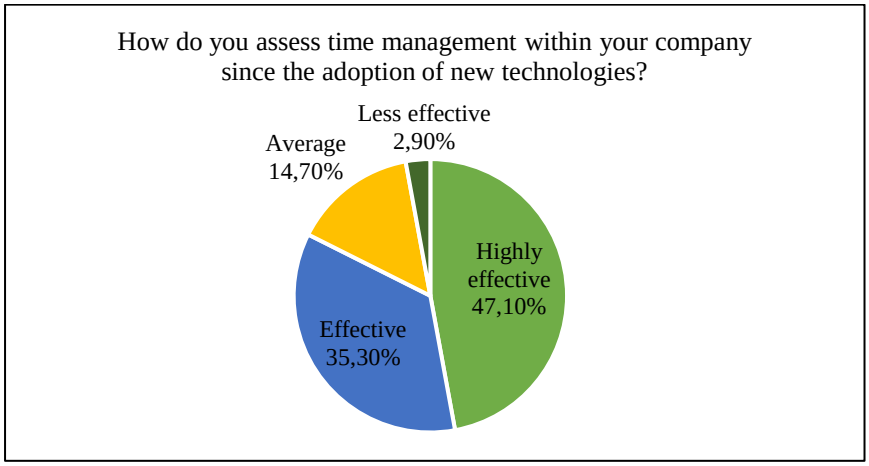
remaining respondents are evenly divided, at 26.5% each, in characterizing this enhancement as either extreme or average.

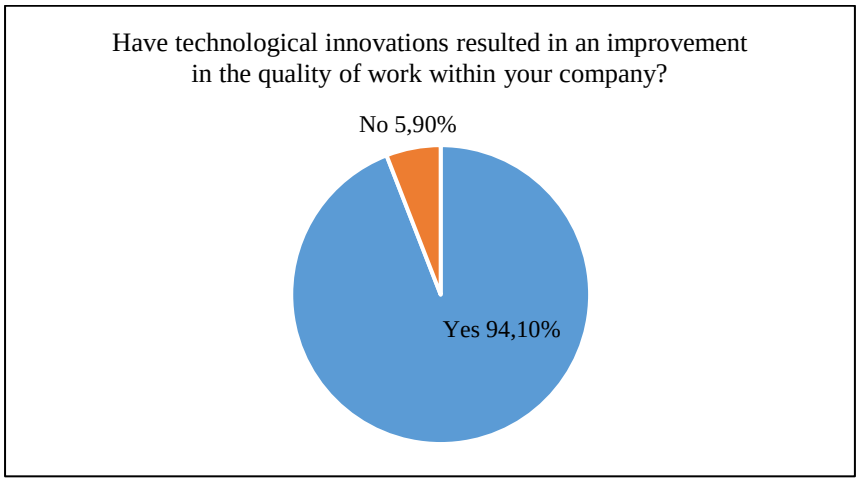
Figure N° 4: Results presentation of Q.N°2.



source: authors.

The responses to the second question, which focuses on the treatment of time management effectiveness following the introduction of new technologies, exhibit a degree of heterogeneity regarding the assessment of time management levels among respondents. A significant portion of respondents, at 47.1%, deems it highly effective, 35.3% find it effective. While, 14.7% indicate an average level of effectiveness, and the remaining 2.9% perceive it as less effective.

Figure N° 5: Results presentation of Q.N°3.



source : authors.

The outcome of this question is succinctly summarized, revealing a majority of 94.1% of respondents perceiving an improvement in the quality of work by the introduction of new technologies, contrasted to a minority of 5.9% who observed that it has no effect on enhancing the quality of work.

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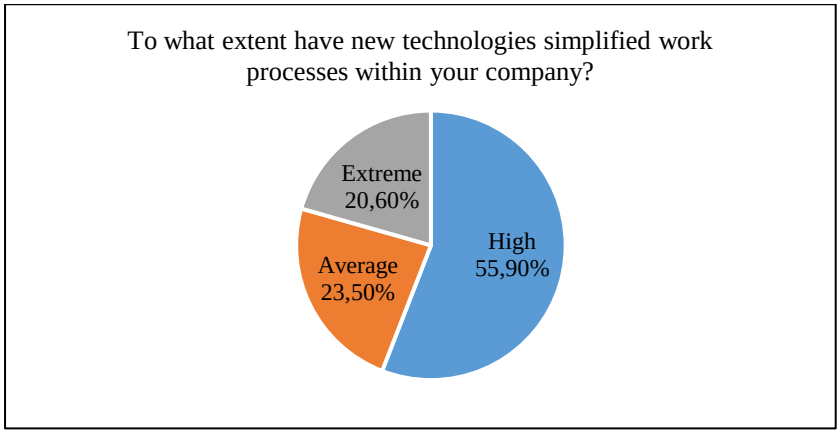
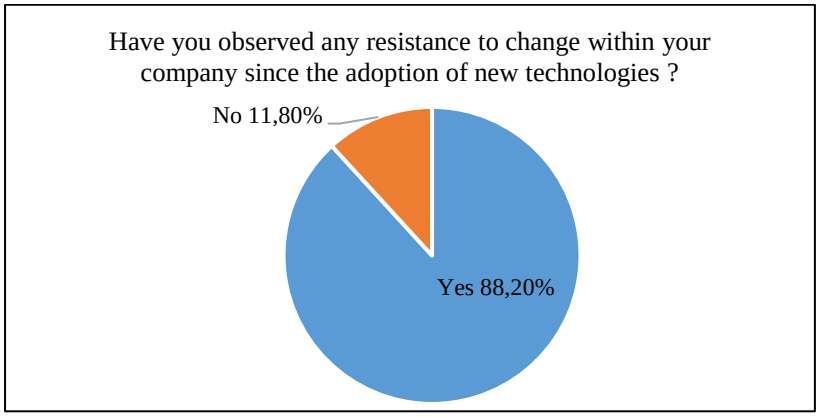
Figure N° 6: Results presentation of Q.N°4.



source: authors.

55.90% of respondents believe that the adoption of new technologies has highly streamlined work processes within their companies. Additionally, 23.50% of the 178 responses describe this simplification as average. In contrast, 20.60% find that the introduction of new technologies has extremely simplified work processes.

Figure N° 7: Results presentation of Q.N°5.



source: authors.

The results of this binary question indicate that 88.20% of respondents observed resistance to changes induced by the adoption of new technologies, while 11.80% did not identify such a resistance.

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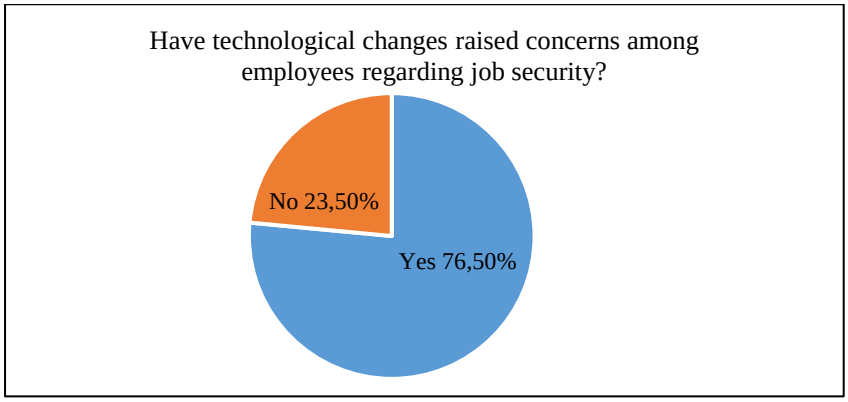
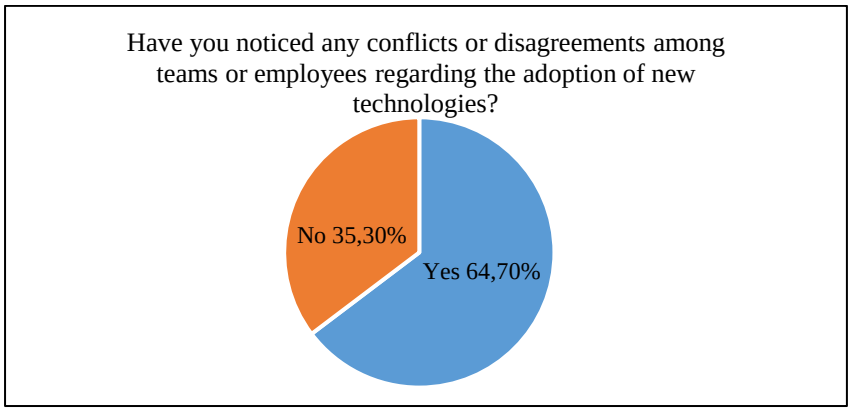
Figure N° 8: Results presentation of Q.N°6.



source: authors.

As for the question related concerns about job security that technological changes may cause among employees, the results show that 76.5% perceived the existence of these concerns, while 23.5% believe that the adoption of new technologies occurs without causing such worries.

Figure N° 9: Results presentation of Q.N°7.



source: authors.

Regarding the question of conflicts and disagreements that employees may encounter among themselves or between teams following the introduction of new technologies, 64.70% of respondents confirm the existence of these conflicts or disagreements, in contrast to 35.30% deny their presence.

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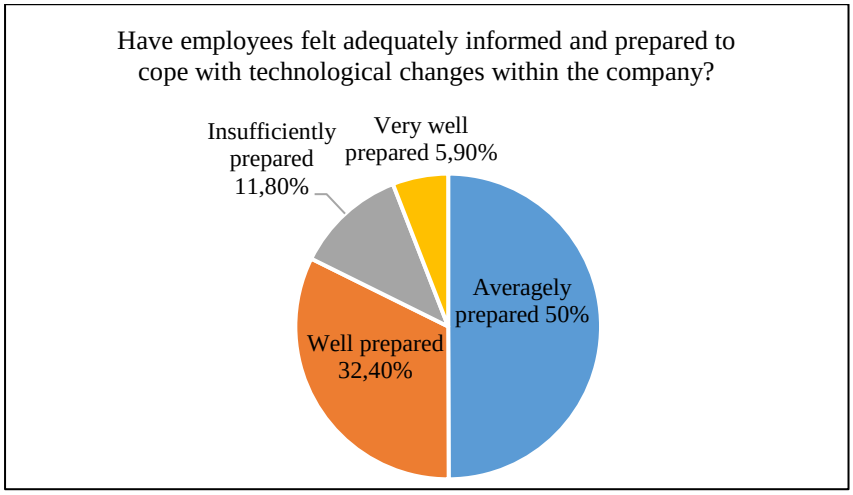
Figure N° 10: Results presentation of Q.N°8.



source: authors.

In our final question, pertaining to the level of information and preparedness of employees to cope with technological changes within their companies, the results indicate that 50% of respondents find themselves averagely prepared, 32.4% well-prepared, 11.8% insufficiently prepared, and the remaining 5.9% consider this level at its highest, feeling very well-prepared to confront these changes.

3.2. discussion:

Table N°2: sort verification of hypotheses.

	Hypothesis	Result
H(1)	The adoption of technological innovation strengthens the culture of efficiency within SMEs in Morocco.	Confirmed
H(2)	The adoption of technological innovation creates tensions within the SMEs culture in Morocco due to resistance to change.	Confirmed
H(3)	The adoption of technological innovation positively influences the corporate culture in Morocco while promoting internal collaboration and communication.	Rejected

Source: Authors.

The survey results reveal that a significant portion of respondents believe that the adoption of new technologies within their companies has significantly contributed to improving efficiency and productivity, and improvement of work quality. This finding aligns with the empirical

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evidence equally proven by Chih-Hai Yang (2022) that corporate culture is an important driver in enhancing innovation. This positive impact on efficiency, productivity and quality of work, suggests that the adoption of new technologies can be a catalyst for positive change within the organizational culture.

The survey results also reveal that a significant portion of respondents perceived concerns related to job security due to technological changes, where job insecurity tends to increase with an increase in technological changes and confirmed the existence of conflicts and disagreements following the introduction of new technologies. This result, which is consistent with empirical research of Bilqees Ghani (2022), underscores the potential impact of technological changes on job security and to lead to conflicts and disagreements.

A significant portion of respondents observed resistance to changes induced by the adoption of new technologies, which is consistent with empirical research that emphasizes the impact of the innovation on organizational culture and performance. This finding, aligns with Antonia Scholkmann (2020) results, suggests that resistance to change is a prevalent challenge in technology adoption, reflecting the influence of organizational culture on the acceptance of new technologies.

In our survey, a notable contradiction emerged from the respondents' self-perceived preparedness and information levels for the adoption of technological innovation, juxtaposed with a significant resistance to the changes induced by this adoption. On one hand, a majority of participants expressed a confidence in their above-average preparedness and information regarding technological innovation, that could be attributed to the increasing accessibility of information and educational resources, empowering individuals to stay informed. On the other hand, the paradoxical resistance to changes suggests a nuanced aspect of human behavior and organizational dynamics. It is plausible that respondents, despite feeling well-informed, may harbor apprehensions or concerns about the practical implications and disruptions associated with technological adoption. The resistance could stem from a fear of the unknown, potential job displacement, or uncertainties surrounding the integration process. This duality in attitudes underscores the complexity of the human response to innovation, highlighting the need for a comprehensive approach in fostering a positive and adaptive mindset to technological changes.

In summary, the results of our study align with the existing empirical research, highlighting the complex interplay between the introduction of new technologies and various aspects of corporate culture. While, on the first hand, technology adoption can lead to improvements in efficiency, productivity, and work quality, and that support our first hypothesis (H1). On the

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other hand, it can also give rise to challenges such as resistance to change, job security concerns and conflicts, that in its turn support validation of our second hypothesis (H2).

These findings underscore the critical role of technological changes in shaping the outcomes of organizational culture within Moroccan SMEs.

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4. Conclusion:

In summary, this research illuminates the intricate interplay between technological innovation and organizational culture within Moroccan SMEs. The positive correlation between technological adoption and the stimulation of an efficiency culture underscores the transformative potential of innovation in enhancing operational dynamics and competitiveness. However, the study also unveils the challenges posed by resistance to change within the organizational employees. The clash between traditional values and the imperatives of technological evolution calls for nuanced change management strategies tailored to the unique cultural contexts of Moroccan SMEs.

In practical terms, these findings emphasize the imperative for policymakers and business leaders to approach technological integration with a holistic perspective. While leveraging the efficiency gains facilitated by innovation, stakeholders must concurrently address and mitigate resistance to change, recognizing it as an intrinsic aspect of the innovation adoption. By fostering a symbiotic relationship between technological innovation and organizational culture, Moroccan SMEs can navigate the complexities of the modern business landscape, ensuring sustainable growth and resilience. This research thus provides valuable insights for informed decision-making in the pursuit of a harmonious coexistence between technological innovation and organizational culture within the specific context of Moroccan SMEs.

Future research may delve deeper into the psychological and organizational factors that contribute to this apparent double effect of technological innovation on the culture of Moroccan SMEs, offering valuable insights for policymakers and businesses aiming to navigate the challenges of technological transitions.

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