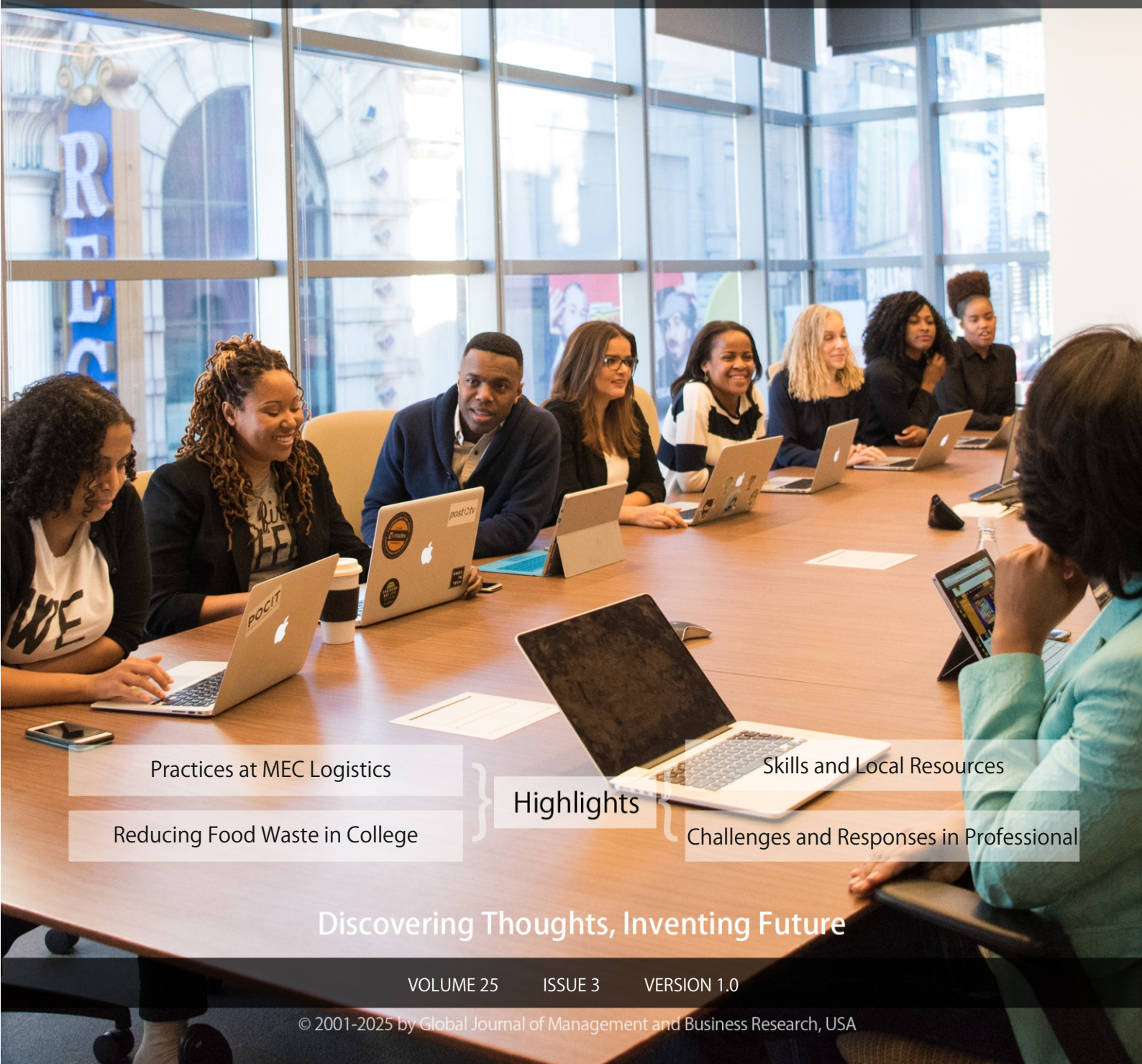


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Candidate Ghosting in the Hiring Process: A Systematic Review of Organizational Challenges and Responses in Professional Settings

By Laureana Teichert

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Abstract- This Systematic Review Sheds Light on knowledge of Ghosting in Vocational Settings. Ghosting Indicates the Abrupt Termination of Contact from One Party to Another without Providing an Explanation. The Theory-Context-Method Framework of Literature Reviews Was Implemented to Provide an Overview of the Research Landscape. Furthermore Examined Were Extant Research Findings regarding the Added Value for Organizations in Recruitment Processes and whether These Findings Are Applicable in the Context of Decision-Making on the Preventive Handling of Candidate Ghosting. Scientific Databases Were Reviewed to Identify Primary Research on the Subject. The Systematic Review Includes 10 Studies That Focus Exclusively on Ghosting in Professional Settings. Content Analysis Was Performed to Analyze and Weigh the Results in Accordance with Their Respective Applicability. The Research Landscape Lacks Studies That Specifically Focus on the Organization so Perspective on Candidate Ghosting.

Keywords: *recruitment, candidate ghosting, candidate experience, data-driven recruiting, vocational settings, psychological contract, organizational behavior, talent acquisition, information asymmetry, human resource management.*

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Candidate Ghosting in the Hiring Process: A Systematic Review of Organizational Challenges and Responses in Professional Settings

Laureana Teichert

Abstract- This Systematic Review Sheds Light on knowledge of Ghosting in Vocational Settings. Ghosting Indicates the Abrupt Termination of Contact from One Party to Another without Providing an Explanation. The Theory-Context-Method Framework of Literature Reviews Was Implemented to Provide an Overview of the Research Landscape. Furthermore Examined Were Extant Research Findings regarding the Added Value for Organizations in Recruitment Processes and whether These Findings Are Applicable in the Context of Decision-Making on the Preventive Handling of Candidate Ghosting. Scientific Databases Were Reviewed to Identify Primary Research on the Subject. The Systematic Review Includes 10 Studies That Focus Exclusively on Ghosting in Professional Settings. Content Analysis Was Performed to Analyze and Weigh the Results in Accordance with Their Respective Applicability. The Research Landscape Lacks Studies That Specifically Focus on the Organization so Perspective on Candidate Ghosting. The Best Indication Is Provided by Kumar and Narayana Demonstrating That the Company's Industry Background and the Candidate's Educational Background indicate a Higher Probability of Ghosting Tendencies. As the Systematic Review Reveals There Is Limited Research Organizations Can Base Recruitment Activities on to Mitigate Candidate Ghosting. Research Is Needed That Addresses Exactly This Organizational Focus on the Phenomenon. Future Research must Provide a Database That Outlines Criteria and Target Groups to Address Preventive Recruitment Activities to.

Keywords: *recruitment, candidate ghosting, candidate experience, data-driven recruiting, vocational settings, psychological contract, organizational behavior, talent acquisition, information asymmetry, human resource management.*

1. INTRODUCTION TO THE ADVENT OF CANDIDATE GHOSTING

Ghosting refers to the termination of contact between two individuals or parties, without providing any explanatory information regarding the reasons (Freedman et al., 2019). Furthermore, ghosting involves blocking the ghosted parties from

communication channels and ignoring contact attempts (Osbert-Pociecha & Bielinska, 2019; Kay & Cortice, 2022). Koessler (2018) characterized ghosting as a dissolution strategy in relationships without the need to confront the other party with ceasing commitment or dealing with possible reactions. The term is derived from the nature of the phenomenon, which is characterized by a sudden disappearance.

This phenomenon originated in romantic relationships. Ghosting has gained momentum with the rise of online dating apps. Virtual communication gives online dating a quality comparable to online shopping (Aretz, 2017). The large number of options makes it challenging to ascertain the individual behind the profile, thus impeding the ability to make an informed decision and resulting in the loss of humanity (Zöllner, 2019). The possibility of initiating and terminating contact spontaneously, offered by advanced technologies and social media, contributes to the phenomenon becoming fashionable (LeFebvre et al., 2019), as evidenced by its emergence in recruiting and organizational processes (Pugh, 2022).

As demonstrated in the extant research, ghosting has infiltrated vocational settings (Gurchiek, 2018). Many applicants terminate recruitment processes without informing the respective organizations (Kumar & Narayana, 2019; German, 2021). Initially, organizations ghosted candidates. Meanwhile, companies are grappling with this behavioral trend (Kumar & Narayana, 2019; Hanigan, 2021), not only in recruitment processes but also company-internally (Vagas & Misko, 2018). Ghosting emerged in vocational settings as a consequence of a multitude of factors influencing labor markets on a global scale, for instance due to a surplus of vacant positions (Olten, 2021).

Although the phenomenon of ghosting in vocational settings has gained considerable attention in public discourse (LinkedIn, 2023), it remains underrepresented in academic discourse (LeFebvre et al., 2019). The initial forays were non-academic approaches conducted by Delgado (2018) and Lewis (2019 (a), 2019 (b)) to gain a thorough understanding of the subject. The initial academic research by Vagas and Misko (2018) concentrates on company's internal ghosting tendencies. Subsequent research focused primarily on the candidate perspective (Osbert-Pociecha & Bielinska,

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2019; Karl et al., 2021). The research landscape encompasses a range of aspects that are becoming increasingly detailed and specific, but lacks at the same time research that addresses the organizational perspective on ghosting to provide a database that would help companies to find a solution in organizational processes.

Existing research has focused on elucidating ghosting from the candidate's perspective. To organizations the information asymmetry in the recruitment processes is of interest (Spence, 1973). In accordance with the principal-agent theory, organizations search for prospective employees to fill open job requisitions. Candidates' pursuit of individual interests presents a challenge, leading to an information lack on the company side (Carr & Brower, 1996). Ghosting can be defined as the non-fulfillment of a psychological contract. Such contracts are formed through a voluntary declaration of mutual expectations and commitment (Lee et al., 2022; Ruchika, 2019; Madan & Madan, 2019; Basavaraj et al., 2022). The fulfillment of these conditions is the choice of each party (Rousseau & Schalk, 2000). Termination of communication during the recruitment process is perceived as a breach of such an informal agreement (Osbert-Pociecha & Bielinska, 2019). Candidates have information regarding hidden characteristics and intentions, such as ghosting tendencies or testing their market value, of which organizations are unaware (Alzaid & Dukhaykh, 2023). Companies can only recognize these characteristics based on the available information. Even in the case of incomplete information, recruitment activities are based on this information content (Deters, 2023).

Over half of the surveyed human resource managers expressed concerns about their preparedness to address candidate ghosting. The pivotal role for organizations is in a single ghosting incident to impair organizational processes rather than in the number of incidents. Consequently, organizations must implement tailored recruitment practices (Kumar & Narayana, 2019). It is necessary to provide a research basis that addresses the needs of organizations, which requires a review of previous research. It is important to determine whether the research results offer companies a basis for recruitment decisions. This systematic review aims to determine whether organizations in recruitment processes can utilize the findings, support the company perspective, and inform decision-making.

The extant literature primarily unveils the background of candidate ghosting and the rationale behind candidates' decisions to ghost. Particularly in the context of recruitment, a company is subject to criticism. The information available to organizations is restricted to application documents and data provided by the candidates without disclosing any indication of their psychological background (Frey, 2020; Going Global,

2005; Going Global, 2007(a)). Organizations make decisions based on available information. The aim is to determine which findings from previous research are available to organizations in recruitment processes and to support the company perspective and decision-making processes when applying activities to mitigate candidate ghosting. Consequently, the following review question is defined:

Does preceding research provide results applicable to companies' recruitment processes to prevent candidate ghosting?

II. METHODOLOGY

Consolidating extant research facilitates the development of a research landscape capable of addressing hitherto unexplored questions and requirements. The potential application of the research findings is considered rather than adhering to the initial purpose of previous studies (Leucht et al., 2009). A systematic review was conducted to provide a synopsis of the current state of knowledge, identify and structure subjects and trends in ghosting in vocational settings, and examine preceding research results regarding the applicability of an alternative usage. This review applies a domain-framework-based approach (theory-context-method framework) to integrate the theories, contexts, and methods to structure and analyze the research landscape and outline future research directions (Harlen & Crick, 2004; Paul et al., 2021).

This systematic review aims to provide a structured overview of the research landscape. The review works towards the identification of the factors analyzed in previous research that are accessible to organizations in recruiting processes and are suitable for decision-making to prevent candidate ghosting tendencies from being triggered. A systematic literature review was conducted to identify relevant articles. The search strategy required consultation with academic databases and journals as the primary sources. Non-academic sources were considered, provided articles referred to those (Harlen & Crick, 2004). Given that the phenomenon of ghosting in vocational contexts has recently emerged in the research landscape, the sources were not limited in order to gain a comprehensive understanding of the phenomenon. Inclusion and exclusion criteria were established (Paul et al., 2021). First, the theory-context-method framework was applied to illustrate the research landscape, considering the distinct aspects of theories, contexts, and methods. Second, the method category was extended to facilitate a thorough examination of the research results. The category of methods was extended to encompass the data collection process, data sources, and corresponding research results. Selected studies were subjected to a detailed content analysis to elucidate the structure, subjects, and trends

of ghosting in vocational settings and preceding findings accessible to organizations during recruiting processes to foster decision-making. The theory-context-method framework provides a distinct coding system. To extend the category of methods concerning the review question, a codebook delineated the information available to companies in the recruiting processes. A meta-analysis could not be performed because the extant research results were not purely quantitative. Instead, a content analysis was conducted. The results were summarized and evaluated in accordance with the review question (Dekkers et al., 2022).

III. INCLUSION AND EXCLUSION CRITERIA

The included research examines ghosting in vocational settings by analyzing ghosting in recruitment processes from the candidate and company perspective. The research obtained data from participants who have been ghosted or engaged in ghosting behavior. The paucity of extant research precludes an examination of specific factors, implicating the inclusion of research that collected data from both the candidate and the company. An essential inclusion criterion was the definition of ghosting to assess conceptualization. Given the limited focus of previous research on ghosting from the candidate's perspective, the inclusion criteria have been expanded to encompass a holistic examination within the professional context. The methodology employed in each study has to be clearly delineated. Studies generating insights into the phenomenon in private contexts, secondary research, and studies lacking direct data from the parties involved, were excluded.

IV. SEARCH STRATEGY

The search period was not limited, given that this phenomenon has recently occurred in academic discourse. Initially, the entire development is considered as relevant. Limitations were established using a recent overview of the literature. Articles published in scientific journals were included. Additional resources were considered for inclusion in the case of references in an identified article (Paul et al., 2021). First, Google Scholar and EBSCO were reviewed. Distinct search terminologies were examined: ghosting, candidate ghosting, candidate-side ghosting, workplace ghosting, employer ghosting, employee ghosting, company ghosting. Next, the bibliographies of the selected studies were reviewed for eligibility. Due to several articles citing research conducted by Indeed, the organization's website was consulted. To search for grey literature, a university library database was accessed (Dekkers et al., 2022).

V. RESEARCH SELECTION PROCESS

The SPAR-4-SLR Protocol (Figure 1) illustrates the selection process. A total of 462 records was identified. Conference and proceeding papers, unpublished dissertations, book chapters, textbooks, and working papers were excluded (Herjanto et al., 2016; Islam & Amin, 2021). Reports addressing ghosting in contexts other than vocational settings were also excluded. Based on the titles and abstracts, 73 articles were evaluated for relevance. Articles that did not report research were excluded. 21 reports were retrieved. The research content is reviewed in detail. Studies that did not report primary research were excluded. 13 studies were assessed for eligibility. 3 additional articles were excluded due to insufficient information regarding the research design. In addition, 3 non-academic studies were included as these were referenced in the selected research. 10 studies met the inclusion criteria (Table 1).



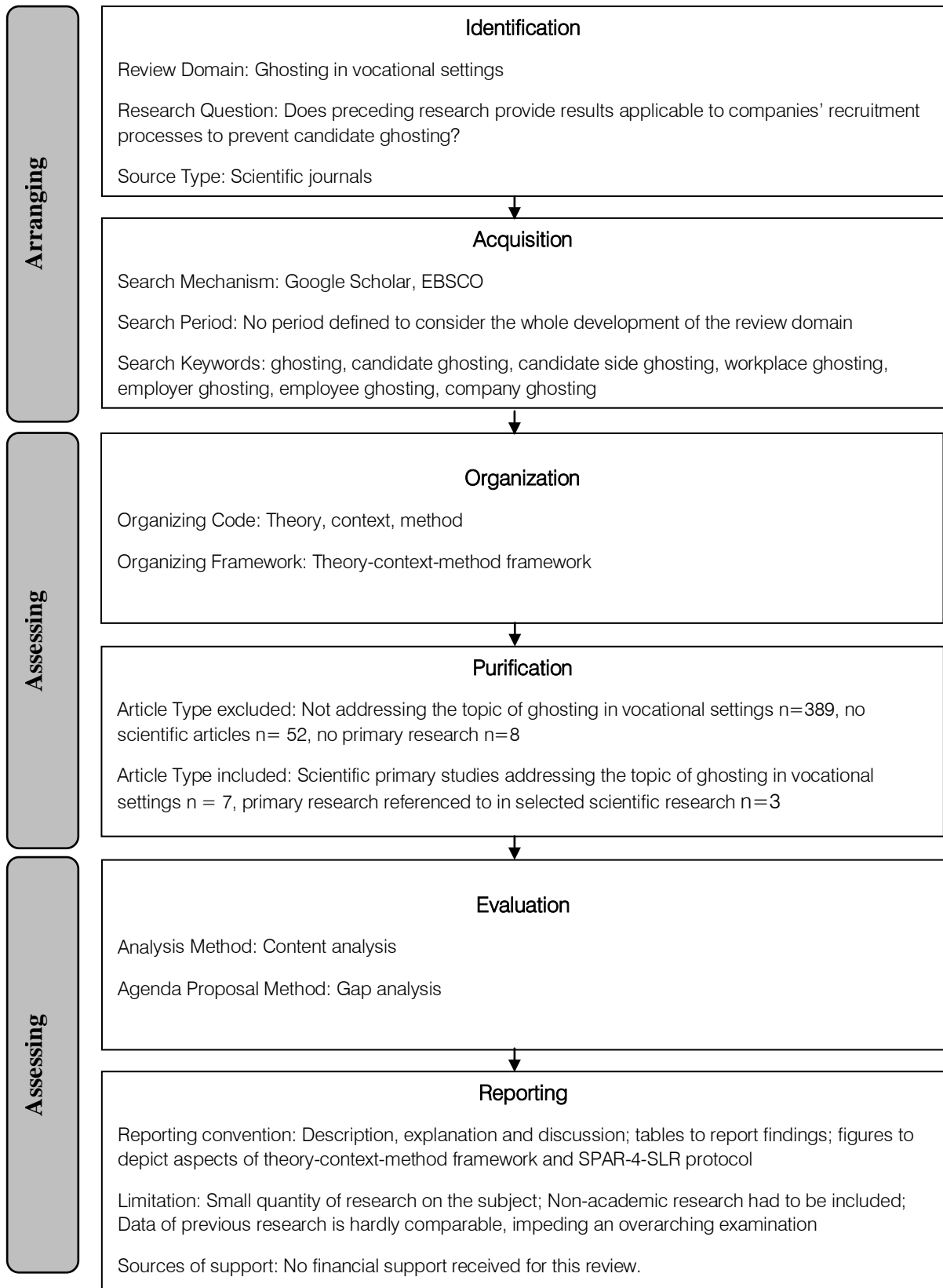


Figure 1: SPAR-4-SLR Protocol

Table 1: Previous Research Corresponding to Defined Inclusion Criteria

Research Focus	Data Source	Publication	Sample	Key Results
Delgado (2018): Clutch: What causes work-place ghosting?				
The acceptance of ghosting from the company and candidate side	Candidate side	Online Magazine	HR 507 full-time employees	Ghosting from company side is more accepted than from candidate side.
Vagas & Misko (2018): Understanding of Ghosting in re-education of human resources in organization				
Development of a measurement concept to predict ghosting tendencies of employees	Employee side	Journal of Inter-Disciplinary Research	202 respondents	The higher the Global Indicator of Ghosting the higher the tendencies to ghost. Men are more likely to ghost than women.
Lewis (2019(a)): Indeed: The Ghosting Guide: An Inside Look at Why Job Seekers Disappear				
Examination of the reasons why candidates ghost organizations	Candidate and company side	Indeed website, Harvard Business Review	4,000 job-seekers, 900 companies	Ghosting from candidate side differs in the age of candidates and in the reasons for ghosting behavior.
Lewis (2019(b)): Indeed: Ghosting unmasked: Listen to the Voices Behind the Epidemic				
Examination of the background of the reasons why candidates ghost organizations	Candidate side	Indeed website, Harvard Business Review	250 job-seekers	Ghosting behavior is used to terminate recruitment processes.
Threlkeld (2021): Indeed: Employer Ghosting: A Troubling Workplace Trend				
The impact of the Covid pandemic on candidate ghosting tendencies	Candidate and company side	Indeed website, Harvard Business Review	500 employers, 500 job-seekers	Job-seekers and employers are ghosting more frequently than before.
Osbert-Pociecha & Bielinska (2019): Ghosting w polskich Przedsiębiorstwach – perspektywakandydata/pracownika. Wyzwania dlarekrutacji				
Examination of the reasons why candidates ghost organizations	Candidate side	AFE Facilities Engineering Journal	>100 participants	Labor market choices and also conditions of recruiting processes cause candidates to ghost companies.
Kumar & Narayana (2019): Ghosting Behavior of Job Applicants: An Analysis of Factors Driving the Behavior				
Examination of the factors that affect ghosting tendencies	Company side	International Journal of Scientific & Technology	110 respondents	The company's industry background and the applicant's field of education are associated with ghosting tendencies on the part of the applicant.
Osbert-Pociecha & Bielinska (2021): Ghosting as a Manifestation of Inversion on the Polish Labor Market				
Identification and perceptions of ghosting on the polish labor market from the candidate and company perspective	Candidate and company side	International Business Information Management Association (IBIMA)	Stage 1: 84 participants Stage 2: 174 participants	Ghosting occurs most frequently in production and administrative positions.



Research Focus	Data Source	Publication	Sample	Key Results
Examination of the factors affecting ghosting tendencies	Candidate side	American Journal of Management	246 respondents	Recruiter's communication level, candidates' attraction to the company, company interest in candidate, conscientiousness, helicopter parenting and gender are factors that are related to ghosting.
Indeed with Censuswide (2023): When Candidates and Recruiters Vanish: Indeed's Ghosting in Hiring Report				
The development of ghosting trends in an international context	Candidate and company side	Indeed website	4,516 job-seekers, 4,517 employers	The phenomenon of ghosting is becoming a permanently part of the hiring landscape on an international level.
Wood et al. (2023): Ghosting from the workplace: The impact of feedback (or lack thereof) on applicants' psychological needs satisfaction				
The impact of feedback and no feedback on candidates' psychological condition	Candidate side	Routledge Open Research	554 unemployed participants	Participants who were ghosted instead of receiving personal feedback after a job application reported higher values of self-esteem than participants who received a personal rejection.
Lyons et al. (2024): The vanishing applicant: Uncovering aberrant antecedents to ghosting behaviour				
Aberrant dispositional characteristics influencing ghosting tendencies	Candidate side	Journal of Occupational and Organizational Psychology	314 participants	Psychopathy and fear of missing out significantly predict ghosting behavior. Being ghosted before moderates the relationship of ghosting behavior and self-control as well as fear of missing out.

VI. EXAMINATION OF RELEVANT EXTANT RESEARCH

The selected studies were reviewed in chronological order based on the publication year. The theory-context-method framework was applied to analyze the structure and subjects of the included research with regard to theories, contexts, and methods. Because the review question required a more detailed look at the methodological concept, the category of methods was extended to review data sources and research results. Each study was subjected to a detailed assessment in preparation for further analysis. Subsequently, the review results are described and explained.

a) *Acceptance of Ghosting by Delgado*

"What causes workplace ghosting?", by Delgado (2018), examined the acceptance of ghosting from the company and candidate side in the US labor market. Ghosting is a permanent element of the hiring landscape. The findings indicate a divergence between companies' and candidates' acceptance of ghosting. The phenomenon is known as 'workplace ghosting.

'Candidates ceased participating in the interview process or after accepting a job offer. Organizations have neglected to follow-up on the next step. Ghosting is indicative of communication failure. A total of 507 full-time employees who had assumed a new position within the previous six months were surveyed. Participation was voluntary. Respondents worked across various business sizes (500+ employees: 35%, 250-500 employees: 20%, fewer than 250 employees: 19%, start-ups: 17%, others: 9%). The survey represented a variety of industries (retail/ hospitality: 21%, healthcare: 16%, technical services: 10%, legal/financial: 9%, education: 9%, government: 5%, marketing/media: 5%, other: 25%). Respondents were located in several regions of the US. 69% of the participants were female and 31% were male, aged 18-34 years (Millennials: 66%, Generation X (age 35-54): 29%, Baby Boomers (age 55+): 5%). A questionnaire was provided to share ghosting experiences from the company's side. The data collected were based on statements from ghosters. The nature of this phenomenon makes it infeasible for organizations to collect such information. Data were analyzed using frequency analysis. 71% of the respondents had already canceled a recruitment

process by engaging in ghosting behavior. Candidates tended to disapprove of ghosting from the company's side more than from the candidate's side. 35% of respondents rated company-side ghosting as disapproved, whereas only 21% rated candidate ghosting accordingly. The emerging communication gap represents a significant challenge for organizations. It is recommended that transparent communication channels should be established to disseminate pertinent information. The frequent occurrence of ghosting should prompt reflection and the enhancement of recruitment processes (Delgado, 2018).

b) *Company Internal Ghosting by Vagas & Misko*

The research "Understanding of ghosting in education of human resources in an organization", by Vagas and Misko (2018), sought to enhance awareness for ghosting incidents within Slovakian companies. This study drew on prior research postulating that ghosting impairs recruitment processes. The methodology designed the Global Indicator of Ghosting (GIG), working towards its verification. The GIG assesses ghosting tendencies among employees and comprises 12 items for self-evaluation on a six-point scale of agreement (Vagas & Misko, 2018). The methodology was designed for internal company contexts but could also be applied to the context of recruitment. The study included 202 participants (male: 45.5%, female: 54.5%; management positions: 44, general roles: 158). The age range of the participants was 18-61 years. The data were collected by distributing the GIG itself and subsequently analyzed through statistical test procedures of factor analysis with varimax rotation and the Mann-Whitney-U-Test. A higher GIG value indicated a greater potential for ghosting behavior among the respondents. Based on these findings, men were more likely to engage in ghosting behavior than women. Women are more likely to continue communication and therefore less likely to ghost (Vagas & Misko, 2018). Ghosting in workplace dynamics has consequences such as changed communication behavior of affected employees, absenteeism, or avoiding communication with certain colleagues. As communication is essential to an entrepreneurial business, training measures should focus on the phenomenon and its avoidance (Conrad, 2014).

c) *Candidates' Reasons to Ghost by Lewis & Threlkeld (Indeed)*

The study is divided into three consecutive sections. The initial section, "The Ghosting Guide: An inside Look at Why Job Seekers Disappear", by Lewis (2019(a)), examined the reasons why candidates in the US labor market choose to ghost organizations. Although ghosting is perceived as a relatively recent phenomenon in the context of labor markets, it has an adverse effect on most organizations and recruitment processes. This study posits that candidates have

disparate motivations for engaging in ghosting behavior. According to the findings, ghosting manifests in various ways, including the failure to attend the first day of work or withdrawal from the recruitment process. The study included 4,000 job-seekers and 900 employers from various sectors, either involved in or experienced ghosting in past hiring processes. Data were collected via questionnaires and analyzed using frequency analysis. The median age of the ghosters was 34 years (age groups: 18-34, 35-44, 45-65) (Lewis, 2019(a)).

The second part, "Ghosting Unmasked: Listen to the Voices Behind the Epidemic", by Lewis (2019(b)), provides a more detailed examination of the reasons why candidates ghost in recruiting processes. Data were collected from 250 job-seekers via questionnaires and subsequently analyzed using content analysis. Initially, ghosting occurred on the company side. Candidate ghosting was posited as a form of retribution. 70% of ghosters were employed full-time. Ghosting can be divided into several categories. 'Partial ghosting' describes a cancellation shortly before an interview. Ghosting can also be characterized as a failure to provide feedback because the organization is not considered as a potential employer. Most respondents expressed concerns about the potential consequences of reputational damage. Improved communication strategies should be implemented to mitigate candidate ghosting (Lewis, 2019(b)).

The third section, "Employer Ghosting: A Troubling Workplace Trend", by Threlkeld (2021), posits that there have been changes in ghosting behavior due to the impact of Covid-19. There has been a notable increase in the frequency of ghosting behavior among job-seekers and employers. Most respondents did not cite Covid-19 as the reason. Ghosting has become a standard component of the hiring process. A total of 500 employers and 500 job-seekers across various industries in the United States with ghosting experiences were surveyed. Data were collected via questionnaires and analyzed using frequency analysis. During Covid-19, employers have taken a more proactive stance to protect their hiring processes from the impact of candidate ghosting. In 2020, 28% of the surveyed job-seekers engaged in ghosting behavior towards a potential employer. Only 4% of respondents indicated that the rationale was Covid-19. The proportion of job-seekers concerned about the potential consequences of ghosting increased from 41% in 2019 to 65% in 2020. 93% of the surveyed organizations documented ghosting incidences. It was recommended to pay greater attention to enhancing communication throughout the entire candidate journey (Threlkeld, 2021).

d) *Generational Differences causing Ghosting by Osbert-Pociecha & Bielinska*

Ghosting by candidates is becoming a significant challenge for the Polish labor market, as



evidenced by the study “Ghosting w polskich przedsiębiorstwach – perspektywa kandydata/pracownika. Wyzwaniadlarekrutacji”, conducted by Osbert-Pociecha and Bielinska (2019). Ghosting is assumed to affect recruitment adversely. Ghosting was defined as ceasing to participate in recruiting processes, including the subsequent stages of not signing the provided contract and not attending the first day of work. Younger generations are more prone to ghosting because they lack experience navigating conflictual situations. An online diagnostic survey was also administered. The sample comprised 101 participants, limited to respondents who had already engaged in ghosting behavior in recruiting processes. However, the sample did not meet there presentativeness criteria. A questionnaire was administered to examine the characteristics, requirements, motives, and future assessment from the candidate’s perspective. Data were analyzed using frequency analysis. The research findings show that ghosting is observable in lower-paid jobs like the construction industry. This behavior was transferred to management positions. Labor market conditions push applicants to engage in ghosting as well do the conditions in recruitment processes. A further survey was conducted on the same sample to explore the challenges faced by human resource specialists. The diagnostic online survey included a metric for assessing participants’ characteristics and identifying ghosting behavior. The study focused on the reasons, conditions, characteristics, and intentions of respondents who ghosted organizations and the consequences for future human resource management. Data were collected via questionnaires and analyzed using content and frequency analysis. Candidates of all ages engaged in ghosting, also with several years of professional experience. Ghosting on the first day of work is the most cost-intensive form for organizations. Several factors can cause this phenomenon, some of which are influenced by organizations themselves (Osbert-Pociecha & Bielinska, 2019).

e) *Factors Influencing Ghosting Tendencies collected on the Company Side by Kumar & Narayana*

The research “Ghosting Behavior of Job Applicants: An Analysis of Factors Driving the Behavior”, by Kumar and Narayana (2019), offers insights into the phenomenon of candidate ghosting within the Indian labor market. The study posits that organizational-level factors influence candidates’ ghosting tendencies. The phenomenon was examined from the company perspective regarding the frequency of ghosting in various locations, the candidate’s level of education, and the company’s preparedness to face ghosting. Structured questionnaires were submitted to organizations via Google Forms. A non-probability convenience sampling method was used to select 150 participants; 127 completed forms were returned, and 110 were deemed appropriate for

analysis. Most respondents were involved in recruiting activities within the previous year. This study primarily focuses on organizations operating within the information and technology sector. Secondary data were collected to confirm the results and provide recommendations. The data were subjected to statistical testing procedures, including percentage analysis, chi-square test, and cross-table analysis. 60% of the surveyed organizations had already faced candidate ghosting. This behavior was found to decrease with increasing professional experience. The organization’s industrial background and the applicant’s field of education were associated with ghosting tendencies on the candidate’s side. Over 60% of human resource managers declared themselves unprepared to face candidate ghosting (Kumar & Narayana, 2019).

f) *Candidates’ Perceptions of Ghosting by Osbert-Pociecha & Bielinska*

In a second study, “Ghosting as a Manifestation of Inversion on the Polish Labor Market”, Osbert-Pociecha and Bielinska (2021) deepened the identification of ghosting. They recorded the phenomenon from the candidate and company perspective on the Polish labor market. It is assumed that ghosting is becoming increasingly prevalent. The sample did not meet there presentativeness criteria. The initial stage of the study (2018/2019) examined ghosting from a company perspective. The research aims to identify the premises, scale, and conditions associated with ghosting, as well as the effects of ghosting on companies and potential actions to prevent the phenomenon. Data were collected from 84 employers via questionnaires (local coverage: 25%, national coverage: 21%, international coverage: 16%, global coverage: 38%; production industry: 30%, IT: 22%, personal consultancy: 14%, logistics: 11%, automotive: 11%, other industries: 3%; business owners and managers: 15%, recruitment specialists/human resource managers: 48%, other management positions: 37%). The data were subjected to frequency analysis. More than half of the participants experienced ghosting on multiple occasions. The findings demonstrate that ghosting is most prevalent in production positions. 66% of the participants stated that they believed that ghosting by candidates prevented companies from hiring irresponsible employees. The second stage of the survey (2019/2020) included candidate perspectives on ghosting. The questionnaire included a metric designed to record the participants’ character traits and identify ghosting from a candidate’s perspective. The sample comprised 174 Polish respondents, who had resigned at least once during the recruitment process. The collected data were analyzed using frequency analysis. 75% of the respondents engaged in ghosting on a single occasion, while 25% engaged in respective behavior on more than one occasion. Generation Y

(born 1980 -1999) participated the most. Respondents with secondary education were twice as likely to engage in ghosting behavior. The most frequent instances of ghosting occurred in administrative or similar positions (Osbert-Pociecha & Bielinska, 2021).

g) *Factors influencing Ghosting Tendencies collected on the Candidate Side by Karl et al.*

“*Slip Out the Back Jack: Why Applicants Ghost Potential Employers*”, by Karl et al. (2021), integrated signaling theory and information asymmetry between two parties. It is assumed that it is necessary to reduce information asymmetry by disseminating pertinent information (Spence, 1973). One example is the relationship between recruitment specialists and candidates. The study examined the predictors of ghosting behavior in the US labor market. A survey was conducted among 246 undergraduates at a medium-sized US university. Questionnaires were distributed during class. The sample consisted of 123 male and 123 female participants. The mean age was 22 years. A random selection was used to assign participants to one out of our scenarios. The initial scenario presented an invitation to a fictitious job interview, with the quality of the recruiter’s communication behavior varying across cases. The information provided regarding the candidate’s suitability for the organization also varied. The questionnaires comprised 6 distinct sections: study description and instructions, scenario describing the job, candidate’s knowledge of the organization and the recruiter’s communication level, candidate’s attraction to the organization and the organization’s interest in the candidate, conscientiousness, helicopter parenting, and ghosting. The data were subjected to statistical analysis, specifically correlation and variance analysis. The findings suggest that the recruiter’s communication behavior, such as perceived fairness, can indicate general communication behavior. Specific behaviors positively affect an organization’s perceived image and interest (McIntyre et al., 1980). Except for company knowledge, all predictor variables were significantly related to ghosting (Karl et al., 2021). The more effective the communication and the more comprehensive the information provided, the more attractive and interested organizations appear to respondents. Respondents with lower levels of conscientiousness were found to be more likely to ghost, as were female respondents, and those who preferred parental involvement (Karl et al., 2021).

h) *International Ghosting Trends by Indeed with Census wide*

“*When Candidates and Recruiters Vanish: Indeed’s Ghosting in Hiring Report*”, conducted by Indeed with Census wide (2023), offers insights into the development of international ghosting trends in 2023, with a particular emphasis on the countries of the US,

UK, and Canada. This phenomenon was examined from both the candidate and company perspectives, assuming that the trend of ghosting developed in accordance with the findings of Lewis and Threlkeld from 2019. The study aims to thoroughly understand the phenomenon, its impact on hiring processes, and recommendations for corporate action. A total of 4,516 job-seekers (US: 1,507, UK: 1,506, Canada: 1,503) who admitted to engaged in ghosting during hiring processes and were employed or seeking employment within the US, aged 18-64, were surveyed via online questionnaires. In addition, 4,517 employers (US: 1,502, UK: 1,506, Canada: 1,509) were surveyed, who experienced ghosting during the hiring process. The findings affirmed that ghosting became more prevalent and a part of the hiring landscape. Ghosting was found to be a permanent element of the recruitment process in all three countries (Indeed Survey with Census wide, 2023).

i) *The Impact of (Lacking) Feedback on Candidates by Wood et al.*

The study “*Ghosting from the workplace: The impact of feedback (or lack thereof) on applicants’ psychological needs satisfaction*”, by Wood et al. (2023), examined the impact of recruiters’ feedback, or the lack thereof, on the psychological needs’ satisfaction of candidates within the US and UK. The research was based on the ostracism theory, which deals with the ignorance and exclusion of individuals from social groups. In this case, the focus was on the communication of rejection decisions in the hiring process. The study surveyed 600 unemployed participants from the US and UK, seeking employment in the US. The final sample comprised 554 participants. Respondents completed simulated online job applications, including different feedback scenarios with no feedback, impersonal feedback (receiving notes without personal information), and personal feedback (receiving notes with personal information). Subsequently, participants completed a feedback form to report their feelings after receiving the rejection feedback. Data were analyzed using statistical tests and one-way analysis of variance. Planned contrasts sequentially compared the cases of no-feedback to impersonal feedback and impersonal feedback to personal feedback. Contrary to the initial hypothesis, ghosted participants reported higher self-esteem than those who received personalized feedback (Wood et al., 2023).

j) *Aberrant Dispositional Characteristics Influencing Ghosting Tendencies by Lyons et al.*

The Research “*The Vanishing Applicant: Uncovering aberrant antecedents to ghosting behaviour*”, by Lyons et al. (2024), examined the antecedents of candidate ghosting within the framework of maladaptive workplace behavior in the context of the US labor market. This



research was grounded in the theoretical frameworks of psychological contracts, trait activation, and conservation of resources. The study focused on the impact of the dark triad, self-control, and fear of missing out on the prediction of ghosting behavior. Additionally, investigated was whether being ghosted previously moderates the relationship between aberrant dispositional characteristics and ghosting tendencies. The data were collected from full-time candidates using the Prolific Academic Platform. A two-wave online survey design was applied, with a final sample of 314 participants. Respondents reported character traits of the dark triad, self-control, and fear of missing out on respective item scales. For ghosting, a dichotomous item (Yes, No) was used. Ghosting behavior was measured using a five-item scale. The hypotheses were tested using a moderated regression method. The results indicated that psychopathy and fear of missing out significantly predict ghosting behavior. Furthermore, the experience of being ghosted was found to moderate the relationships between ghosting behavior and self-

control and ghosting behavior and fear of missing out (Lyons et al., 2024).

VII. CODING CATEGORIES

In the initial content analysis phase, the coding categories (theory, context, and method) of the theory-context-method framework were applied. The category of methods was extended by examining which research results are accessible to organizations during recruitment processes. A codebook was used to filter out the results that addressed the review question. The codebook identifies data that organizations have access to during recruitment processes and can be applied to support decision-making. Access is limited to information available from the initial phase of the recruitment process and is provided by the candidates themselves when submitting application documents. Thus, the codebook (Table 2) was defined based on the information available in application documents.

Table 2: Codebook

Factor	Specification	Reference	Instruction for Data Collection
Ghosting	Termination of communication during recruiting processes, no reaction to contact attempts	Freedman, 2019; Kumar & Narayana, 2019; Karl et al., 2021; Osbert-Pociecha & Bielinska, 2019	Results/findings regarding the definition, forms or specification of ghosting in vocational surroundings
Professional experience	Years spent working in the professional context, years of the career path	Frey, 2020; Going Global, 2005; Going Global, 2007(a); Going Global, 2007(b); Going Global, 2007(c); Pflaum, 2023	Results/findings regarding the years of professional experience, the professional maturity or the extent of the career path
Age	Age of the candidate	Frey, 2020; Going Global, 2005; Going Global, 2007(a); Going Global, 2007(b); Going Global, 2007(c); Pflaum, 2023	Results/findings regarding the age, average age or birth date of respondents
Type of employment	Type of the contractual situation a candidate is currently employed in	Frey, 2020; Going Global, 2005; Going Global, 2007(a); Going Global, 2007(b); Going Global, 2007(c); Pflaum, 2023	Results/findings regarding the contractual situation of candidates
Educational background of candidate	The area a candidate is educated in	Frey, 2020; Going Global, 2005; Going Global, 2007(a); Going Global, 2007(b); Going Global, 2007(c); Pflaum, 2023	Results/findings regarding the education, study or apprenticeship a candidate achieved
Highest educational degree	The highest degree a candidate achieved during the educational career considering all	Frey, 2020; Going Global, 2005; Going Global, 2007(a); Going Global, 2007(b);	Results/findings regarding educational degrees or achievements

Factor	Specification	Reference	Instruction for Data Collection
	kinds of education, studies, apprenticeships or further education	Going Global, 2007(c); Pflaum, 2023	
Industrial sector of company	The industrial sector the respective company has its core business in	Frey, 2020; Going Global, 2005; Going Global, 2007(a); Going Global, 2007(b); Going Global, 2007(c); Pflaum, 2023	Results/findings regarding the industrial sector participating companies are operating in
Salary	The salary a candidate is expecting in the new position	Frey, 2020; Going Global, 2005; Going Global, 2007(a); Going Global, 2007(b); Going Global, 2007(c); Pflaum, 2023	Results/findings regarding the salary, salary levels or salary expectations
Gender	Gender of the candidate	Frey, 2020; Going Global, 2005; Going Global, 2007(a); Going Global, 2007(b); Going Global, 2007(c); Pflaum, 2023	Results/findings regarding the gender of respondents
Management level	The level of management responsibilities of the position a candidate is filling	Frey, 2020; Going Global, 2005; Going Global, 2007(a); Going Global, 2007(b); Going Global, 2007(c); Pflaum, 2023	Results/findings regarding the level of management responsibilities of respondents
Further education/trainings	Participation in further education, trainings or development activities	Frey, 2020; Going Global, 2005; Going Global, 2007(a); Going Global, 2007(b); Going Global, 2007(c); Pflaum, 2023	Results/findings regarding any kind of further education, trainings or career development activities

VIII. QUALITY ASSESSMENT

This review applies a systematic literature review and a domain framework-based approach. The theories applied in the selected studies were reviewed to either employ a scientific theory or a theoretical assumption that led to the conduction of the respective studies. The coding category of context relates to the study's setting, describing the field in which the results were generated and providing a basis for comparison with further research. The coding category of methods examined the methodological procedures, differing between qualitative and quantitative approaches. The objective of utilizing the theory-context-method framework is to provide a conceptual structure for understanding the research landscape, gain insights into the current state of knowledge, and identify upcoming research trends.

Considering the focus of the review question (the usability of research results in recruitment processes as a basis for decision-making by companies to mitigate candidate ghosting tendencies), a more detailed evaluation of the research results is needed.

The aim was to evaluate whether the results of extant research are available to organizations in recruitment processes and could be used for decision-making on the company side to prevent candidate ghosting or ghosting tendencies from being triggered. Therefore, focused was the data generation process. Potential biases in previous studies and the quality of applied methodological concepts were considered. The leading question was whether the information was accessible to organizations during recruitment processes. The second criterion was whether the results obtained could be used in decision-making. The third criterion pertains to data sources and collection methods. Quantitative results were classified as more suitable than qualitative results. This evaluation does not imply a general rating of quantitative or qualitative data. This rating determines the closest possible answer to the review question. A five-stage evaluation system was applied to determine the weighting of the research results: 1 = poor-quality implementation of the respective quality criteria, 5 = high-quality implementation of the respective quality criteria, and 0 = no information. The total evaluation score was used to rank the research results to identify

implementation of the respective quality criteria, 5 = high-quality implementation of the respective quality criteria, and 0 = no information. The total evaluation score was used to rank the research results to identify the highest scores and, therefore, most relevant findings (Table 3). The relevance of the results was categorized into three groups. Research by Delgado (2018) (rating 10), Lewis (2019(b)) (rating 10), Threlkeld (2021) (rating 14), Lewis (2019(a)) (rating 15), Osbert-Pociecha & Bielinska (2019) (rating 15) and Indeed with Census wide (2023) (rating 15) was of limited relevance in

addressing the review question. The research conducted by Karl et al. (2021) (rating 16), Osbert-Pociecha & Bielinska (2021) (rating 17), and Vagas & Misko (2018) (rating 18) were deemed moderately relevant. Studies by Lyons et al. (2024) (rating 24), Wood et al. (2023) (rating 25) and Kumar & Narayana (2019) (rating 26) were found to be the most relevant to answering the review question. The data gained in those studies are most suitable for supporting companies in preventing candidate ghosting tendencies from being triggered during recruitment processes.

Table 3: Quality Assessment

Research	Data Collection Method	Data Source	Data Analysis	Sampling	Variable/Measure Choice	Quality Criteria	Publication	Total
Delgado, 2018	Online survey: questionnaire	Candidate side	Frequency analysis	507 fulltime employees	No explanation	No information	Online HR Magazine	10
Vagas & Misko, 2018	Questionnaire	Candidate and employee side	Statistical analysis	202 employees	Twelve factors for self-assessment	No information	Journal of Inter-Disciplinary Research	18
Lewis, 2019(a)	Online survey: questionnaire	Candidate side and company side	Frequency analysis	4,000 job-seekers and 900 employers	Ghosting	No information	Indeed website	15
Lewis, 2019(b)	Online survey: questionnaire	Candidate side	Narrative analysis	250 job-seekers	Ghosting	No information	Indeed website	10
Threlkeld, 2021	Online survey: questionnaire	Candidate side and company side	Frequency analysis	500 employers and 500 job-seekers	Ghosting	No information	Indeed website	14
Osbert-Pociecha & Bielinska, 2019	Diagnostic online survey: questionnaire	Candidate side	Frequency analysis	101 participants	Ghosting	No representativeness	AFE Facilities Engineering Journal	15
Kumar & Narayan, 2019	Questionnaire	Company side	Frequency analysis, statistical analysis	110 companies	Factors attributed to the candidate and company side	No information	International Journal of Scientific & Technology	26
Osbert-Pociecha & Bielinska, 2021	Questionnaire	Candidate and company side	Frequency analysis	Stage 1: 84 participant, stage 2: 174 participants	Ghosting	No representativeness	International Business Information Management Association (IBIMA)	17

Karl et al., 2021	Questionnaire	Candidate side	Statistical analysis	246 undergraduates	Four-factor model on candidate perception about company	No information	American Journal of Management	16
	2	2	5	2	1	0	4	
Indeed with Census-wide, 2023	Online survey: questionnaire	Candidate side and company side	Frequency analysis	4,516 job-seekers, 4,517 employers	Ghosting	No information	Indeed website	15
	2	4	2	4	2	0	1	
Wood et al., 2023	Simulated cases of job applications	Candidate side	Statistical analysis	554 unemployed participants	No feedback, impersonal feedback, personal feedback	Manipulation checks	Routledge Open Research	25
	5	2	5	3	3	4	3	
Lyons et al., 2024	Online survey: questionnaires with item scales	Candidate side	Statistical analysis	314 participants	Age, narcissism, machiavellianism, psychopathy, self-control, fear of missing out, being ghosted	Power analysis, control variables, test-retest reliability, supplemental convergent validity	Journal of Occupational and Organizational Psychology	24
	3	2	5	2	2	5	5	

IX. SYNTHESIS

Coding the selected studies according to the theory-context-method framework demonstrated that the research landscape of ghosting in vocational settings is diverse (Figure 2). Although the number of studies was limited, the number of elements in the coding categories was considerable. A primary overlapping area was identified in the context category. The coding of applied theories was divided into two categories: theoretical assumptions underlying the respective study and a scientific theory applied to the respective study design. Considering the coding category of methods, the listing appeared to be dominated by statistical analysis and quantitative methods. Albeit, the majority of selected studies applied content analysis in conjunction with frequency analysis to provide a descriptive presentation of the research findings. Quantitative methods have been applied in research focusing on specific aspects of the phenomenon.

Theory	
<p style="text-align: center;">Theoretical Assumptions</p> <ul style="list-style-type: none"> • Ghosting manifests in labor markets • Candidates have distinct reasons to ghost companies • Covid-19 had an effect on ghosting behavior • Ghosting impairs recruiting processes in polish companies • Distinct factors have an effect on ghosting behavior • Ghosting in the workplace is different than in relationships • Ghosting affects hiring processes • Ghosting is spreading even further and distinct aspects can be identified 	<p style="text-align: center;">Scientific Theory</p> <ul style="list-style-type: none"> • Social exchange theory • Psychological contract theory • Trait activation theory • Conservation of resources theory • Signaling theory • Ostracism theory
Context	
<p style="text-align: center;">Countries</p> <ul style="list-style-type: none"> • United States • Slovakia • Poland • India • Canada • United Kingdom 	<p style="text-align: center;">Employment Situation</p> <ul style="list-style-type: none"> • Employed • Full-time employed • Unemployed • Undergraduates
Methods	
<p style="text-align: center;">Qualitative Methods</p> <ul style="list-style-type: none"> • Content analysis 	<p style="text-align: center;">Quantitative Methods</p> <ul style="list-style-type: none"> • Frequency analysis • Moderated regression • Confirmatory factor analysis • Factor analysis • Varimax rotation • Mann-Whitney-U Test • Variance analysis • Correlation analysis • Percentage analysis • Chi-Square test • Cross-Tables analysis

Figure 2: Theory-Context-Method Framework

The data evaluation using the codebook revealed results that could be classified into two categories. The first category addresses ghosting in vocational settings in a general manner, focusing on its frequency and impact in corporate contexts. To decide on the quantity of recruitment measures and processes to deal with candidate ghosting, this category should be considered, but is not included in answering the review question. The second category is distinguished by factors attributed to organizations or the candidates

themselves. The specifics of the respective organizations or candidates are delineated, pointing to criteria that help determine the target group recruiting activities should be directed to. The objective is to prevent ghosting in recruitment processes and enable organizations to respond effectively based on these findings. The weighting (Table 4) in the previous section is referred to in the following evaluation, indicating relevance.

Table 4: Synthesis of Research Results

Preceded Research	Rating	Category 2: Attributes	
		Attributed to Candidates	Attributed to Companies
Kumar & Narayana (2019)	26	Candidate ghosting occurs in Marketing and Sales: 16%	Business area of the company and frequency of job-applicant ghosting => Dependence: yes
		Candidate ghosting occurs in Human Resources: 11%	Educational background of candidates and frequency of job-applicant ghosting => Dependence: yes
		Candidate ghosting occurs in Finance and Accounting: 32%	
		Candidate ghosting occurs in Operations: 14%	
		Candidate ghosting occurs in other functional areas (Back-end, Front-end, Logistics, etc.): 27%	
		Candidate ghosting occurs in top-level positions: 5%	
		Candidate ghosting occurs in middle-level positions: 16%	
		Candidate ghosting occurs in the educational background of Engineering: 15%	
		Candidate ghosting occurs in the educational background of Management: 33%	
		Candidate ghosting occurs in the educational background of Computers: 48%	
		Candidate ghosting occurs in the educational background of Others (Pharmacy, Architecture, Law, etc.): 4%	
		Candidate ghosting occurs in processes with profiles with high experience: 3%	
		Candidate ghosting occurs in processes with profiles with moderate experience: 36%	
		Candidate ghosting occurs in processes with profiles of freshers: 60%	
Vagas & Misko (2018)	18	Men: Median 4,50	
		Women: Median 2,96	
		Participation in educational and development activities: 64,4%	
		Participation in teambuilding activities: 40,6%	
Osbert-Pociecha & Bielinska (2021)	17		Production position: 45%
			Specialist position: 30%
			Administrative position: 15%
			Management position: 10%
Karl et al. (2021)	16	Gender: significant correlation to ghosting	
		Men: More likely to ghost	
		Women: Less likely to ghost	
Osbert-Pociecha & Bielinska (2019)	16	Applicants born 1980-1999: most frequently	Jobs in administration: most frequently
		Supervisors, specialists, manager: 20%	
		Candidates with secondary education: ~ 50% higher	



X. REVIEW RESULTS

The evaluation of the theory-context-method framework demonstrates that the research is characterized by a high degree of differentiation. Examination of the coding category of theories revealed that 70% of the selected studies were based on theoretical assumptions due to the recent emergence of the subject in academic discourse and the lack of a substantial knowledge foundation. First, an overarching understanding of the subject was established. Subsequently, the research was linked to specific scientific theories of social exchange, psychological contracts, trait activation, conservation of resources, signaling, and ostracism. However, these studies have not been based on the same theoretical concepts. Initially, research was based on theoretical assumptions. Scientific theories were introduced in 2021 and became increasingly precise in their theoretical background by focusing on distinct aspects of the phenomenon.

The context category evinced a more consistent conceptualization. The context of country was applied in all of the reviewed studies. The US context was investigated to the greatest extent, marking the starting point for the research landscape. Further research was conducted primarily in Europe. One study concentrates on the Indian labor market. The sample selection process of examined studies led to the development of an additional context category, which usage was found to be inconsistent throughout the research development. Some studies have focused on the respondents' employment status, whether employed or unemployed. Other studies have narrowed the focus to full-time employees or university respondents. This subcategory is not associated with the country's context.

An examination of the method category revealed that 50% of the selected studies applied content analysis in conjunction with frequency analysis. The remaining studies integrated various quantitative approaches and statistical analysis methods to evaluate the data, resulting in disparate research outcomes that were challenging to compare. The selection of statistical analysis methods indicates that the research is still in its preliminary stages and has not yet embraced a unified methodological approach. Since the occurrence of ghosting in academic discourse, quantitative and qualitative methodologies have been applied, with a notable shift towards quantitative research designs. Research approaches have been expanded to encompass a more focused and detailed examination of ghosting in vocational contexts, with particular emphasis on specific aspects of the phenomenon that require comprehensive and precise research designs.

The development of this research field indicates a tendency towards specific approaches. As each study focused on ghosting within the context of a single country, the findings suggest that further research

should concentrate on the context of countries to achieve international comparability. Several studies have examined the phenomenon using frequency analysis. The research landscapes specifies the focus, research design, and data analysis methods to facilitate generalizability by applying quantitative concepts. 70% of the selected studies made theoretical assumptions. Theory-based research has been conducted since 2021, although it does not overlap within theoretical concepts. Research has tended towards theory-based approaches that apply specific quantitative methods to generate further knowledge and novel approaches.

A review of the research findings revealed many results that are already available. Research has been conducted on the reasons for candidate ghosting and the frequency and acceptance of ghosting. An examination of the research focus revealed that the study by Kumar and Narayana (2019) is the only one that concentrates exclusively on the company perspective. Considering the review question (Does preceding research provide results applicable to companies' recruitment processes to prevent candidate ghosting?). The following research results offer a point of reference for organizations to take preventative action against ghosting tendencies.

The research results of Kumar and Narayana (2019) were deemed the most suitable for addressing the review question. This study provides results that can be directly attributed to organizations. Based on these findings, a statistically significant correlation exists between candidate ghosting and the industry in which the organization operates. A statistically significant correlation was found between candidate's educational backgrounds and candidate ghosting. Moreover, the highest incidence of candidate ghosting was observed in the finance and accounting sector (32%), followed by marketing and sales (16%), and operations (14%). Candidate ghosting was most prevalent in middle-level positions (16%). Candidates with a background in information technology were most likely to engage in ghosting (48%), followed by those with a background in management (33%) and engineering (15%). Career starters were more likely to engage in ghosting behavior (60%) than those with a few years of professional experience (36%).

The second-ranked research by Vagas and Misko (2018) provided results attributed to candidates. Male candidates were more likely to engage in ghosting behavior than female candidates. The findings indicate that 64.4% of candidates who participated in training programs and 40.6% of candidates involved in team-building activities did not engage in ghosting behavior.

The study by Osbert-Pociecha and Bielinska (2021) ranked third in relevance. The research results serving the review question were attributed to the company. The position applied to is a factor affecting ghosting behavior. 45% of employers experienced

ghosting in recruitment processes for production positions, whereas 30% experienced ghosting in the recruitment processes for specialist positions. Ghosting in the context of job applications was more prevalent in administrative positions (15%) than in management roles (10%).

The fourth-ranked study was conducted by Karl et al. (2021). The results were attributed to the candidates and related to gender. Accordingly, a statistically significant correlation was found between the candidate's gender and ghosting. These findings indicate that men are more likely to engage in ghosting behavior than women.

The final study that must be considered in terms of relevance is conducted by Osbert-Pociecha and Bielinska (2019). A finding was provided that can be directly attributed to the organization, showing that ghosting is most prevalent in positions within the administrative sector. Further results could be attributed to the candidate. Respondents born between 1980 and 1999 exhibit the highest probability of engaging in ghosting behavior. Those with a secondary education were 50% more likely to resort to ghosting. The probability of engaging in ghosting behavior is 20% for supervisors, specialists, and managers.

In addition to the provided findings, outlined have to be the subjects and areas that were not mentioned and examined by previous research so far. Although some of the studies incorporated distinctive theories, there is a lack of the inclusion of overarching subjects and trends within the field of human resource management like employer branding, artificial intelligence or the ongoing digitalization of recruitment processes.

The examination of previous studies demonstrates that companies would have to rely on isolated research findings of single studies. According to the review results the research landscapes provides indications, but not a sufficient database to enable companies to adapt recruitment activities accordingly. So far, companies have to rely on general preventive measures like advancing frequent touch points with the candidates to generate a higher candidate commitment during recruitment processes. In addition, the systematic review points out which data and knowledge is missing to be able to address the problem of ghosting in professional settings in the future. Both academic discourse and organizational contexts would benefit from research that focuses on generating data to mitigate ghosting in recruitment processes. The systematic review takes an advanced look at the problem behind the phenomenon and outlines the direction for academic discourse to provide a solution for organizational contexts and decision-making processes regarding recruitment processes.

As demonstrated by the analysis of the selected studies, research on ghosting in vocational

contexts is still in its initial phases. Research addresses the audience of human resource and recruitment specialists to revive interest in the subject, but is not designed to meet a specific practical application or implementation within organizational processes. Research has not yet offered a clear direction for the field. Diverse outcomes indicate that further investigation is feasible and necessary. The review results are consolidated in Table 5.

XI. DISCUSSION

In the following section, the systematic review is discussed from various aspects, including strengths, weaknesses, and limitations that need to be considered. Given the paucity of extant research, the theory-context-method frame work is ideal for gaining an overview. The research landscape was structured, and the differentiation of previous research was distinctly high-lighted. The methods category was extended by an additional section that addressed the review question in detail.

This systematic review not only reveals the limitations of extant research but also those inherent to the systematic review itself. Consequently, the outcome of this review is more indicative of gaps than a synthesis of extant research results. Given the limited quantity of previous research, non-academic studies had to be integrated to represent the initial stage of the phenomenon within academic discourse. Existing research has focused on different countries, resulting in finding unsuitable for generalizability. These results provide evidence for frequencies. Indications of ghosting tendencies are generally provided without an indication of statistical probability. A synthesis of the research results to date has proven to be a challenge, as previous research was not based on the same methodology and the research results had to be restructured accordingly.

The defined review question allowed an unambiguous interpretation of the research analysis and results. Owing to the explicit definition of candidate ghosting in the selected research, relevant studies were delineated without major difficulties. Based on the underlying review question, the breakdown of results across the previous chapters is clear. Research findings can be extracted without significant challenges.

To address the review question, it was necessary to not only aggregate the research landscape but also examine the research results through a specified focus. The findings revealed that the results were conducive to fostering organizational processes. The results available to companies in the recruitment process were not originally designed to meet the specific requirements outlined in the review question. The review question does not focus on the purpose and scope of the extant research; instead, it aims to address alternative objectives. By introducing a new perspective,



this review broadens the scope of previous research, necessitating the collection of additional results to gain a more comprehensive understanding.

Gaps in the research landscape are outlined. Extant research focuses on the same phenomenon but differs in the research design. A review approach to the subject was necessary to either identify the common factors underlying the disparate research findings or to ascertain whether a common denominator could be discerned when examining the research from a different perspective than initially intended by the respective studies. A comprehensive research foundation was established, indicating the need for a more targeted and specific approach. An overview of the research landscape is also provided. In addition, the review aimed for a common denominator regarding the preceding research. This common denominator is essential to close the gap between the emerging problem for organizations (candidates not replying anymore during recruitment processes and companies that do not know how to respond to and handle this behavior) and the research landscape that investigates the same phenomenon by revealing the reasons why candidates ghost and not how to identify ghosting tendencies in advance to prevent the phenomenon from being triggered. The systematic review specifically points towards this blind spot for organizations and analyses towards what extend the research landscape serves for a solution. To date, previous research provides indications that have to be further investigated with a narrowed focus on organizational processes. For instance, it is necessary to generate research on comparative studies, focusing not only on one country, but collecting and comparing data from different countries. As well, the industry and sector focus should be investigated to a greater extend to provide improved research results that work towards comparability and generalizability.

In addition, fields for further research were delimited to serve as future contributions to academic discourse, professional settings and in particular organizational processes. There is a need for a database that extends beyond general information and specifically addresses organizational processes. This review presents a preliminary step toward generating a database that addresses this applicability.

XII. IMPLICATIONS FOR FUTURE RESEARCH

This review allows for the clear identification and delineation of research gaps and the delineation of fields for follow-up research. Further research should be conducted in other countries for international comparability. Furthermore, additional research based on a quantitative design is required. A comprehensive database was established to provide a general understanding. Further research should extend this

database with knowledge that helps to draw generalized conclusions. Novel research approaches based on scientific theories are necessary to contextualize the phenomenon within scientific discourse and elucidate its connections to other phenomena related to relevant theories.

Given that many reasons for candidate ghosting are associated with the companies themselves (Cuadra, 2023), companies must be equipped with the necessary tools to respond effectively to this phenomenon. Considering the high costs of implementing general measures, organizations require more detailed information about the target groups to adopt measures accordingly. As this systematic review examines the applicability of existing research results to recruiting processes, further research should build on this basis and extend the number of results organizations can rely on to set up decision making-processes and tailor recruiting activities to the outlined target groups. Research must consider the company perspective on the phenomenon. In addition, future research must provide tailored results specifically for the target group of recruiting specialists tasked with optimizing recruiting activities.

In detail, future research needs to focus on data collection that considers the availability of respective data to organizations in recruitment processes. As well, to work towards generalizability and applicability in organizational processes, future research designs have to incorporate statistical test procedures to not only generate a statement on frequencies, but to demonstrate statistical probabilities to foster decision-making in organizational processes. In addition, future research should focus on approaches that work towards a practical implication in professional settings. Research should not address a certain target group, but address the respective problem of vanishing candidates in recruitment processes and missing solutions to handle this trend accordingly from company side.

XIII. PRACTICAL IMPLICATIONS FOR ORGANIZATIONAL CONTEXTS

This chapter sheds light on the resulting practical implications. As the research landscape is in its initial phase to investigate the phenomenon of ghosting in professional settings, there are only a few indications which have to be taken into account. The systematic review clearly demonstrated that companies should take the problem of candidate ghosting seriously and prepare to handle ghosting in recruitment processes. So far, a target group to adapt recruitment activities to is not identified. Therefore, organizations should rely on general measures and best practices to improve the candidate journey and experience throughout the recruiting process. As candidate ghosting emerges, interest wanes and commitment towards the recruitment

process decreases, companies should improve touch points, communication and information flow towards a more frequent and transparent manner. Candidates should have the feeling that their dedication and effort in the process is valued and seen. As well, interest from company side should be communicated clearly, already in early stages of the recruitment process to increase the candidate commitment. These suggestions on recruitment activities should be especially taken serious for candidate groups that belong to the groups outlined in previous chapter and have a higher probability to engage in ghosting behavior. The future purpose of adapting tailored recruitment activities to outlined candidate target groups, as it is already usual for customer experience measures, has to be supported by academic levels by providing the according candidate target groups.

Taking into account the demographic changes a lot of countries are facing, candidates have to be treated like customers and not like applicants. Not only the number of candidates in certain countries decreases, also the labor market develops on an international scale. Candidates have job alternatives around the world. As well, companies are reaching out to candidates on an international and global level. Labor markets are not limited to one country anymore. Therefore, improving the candidate experience and recruitment processes towards a candidate centric recruitment approach comparable to customer experience approaches is relevant to stay ahead of the competition.

In addition to adjusting the candidate experience towards a customer experience, the whole recruitment process should benefit from the possibility of generating, collecting and analysing data. In a data-driven era companies have to recognize that not only sales benefits from data analysis. Also, human resource management and in this particular case recruitment provides data that can be analysed and newly generated knowledge implemented to improve organizational processes. Data offers the possibility to gain information and advantage in advance. This systematic review incorporates the first step to lead the research landscape of ghosting in professional settings towards data-driven and candidate centric research approaches and accordingly adjusted and improved recruitment activities and processes.

XIV. CONCLUSION

The company perspective on candidate ghosting is underrepresented in academic research. Only a few preliminary indications have been provided to counteract candidate ghosting in the context of recruitment. Although previous studies have identified the reasons for ghosting behavior, most of the reasons are attributed to the companies themselves. There is a

dearth of guidance on recruitment practices and a database to enable the adjustment of measures from the company side. The actions taken by organizations are based on previous practical experiences. In the current data-driven era, in which processes are increasingly personalized and optimized, the recruitment process itself must become more data-driven. This indicates the need to generate profound insights and information from the available data to enhance the candidate experience and journey. The reproach is leveled against the company side without providing a state of research or a database that enables organizations to react to this allegation.

The current state of knowledge provides indications of possible ghosting tendencies and the frequencies of various factors. There is a lack of an actual database tailored to organizational processes that would support decision-making with regard to preventive actions. Previous research can be consulted for indications. However, previous research does not provide a consistent concept or valid statement regarding the review question.

To date, organizations have to rely on the research that was already provided. As demonstrated in the systematic review, there are indications companies can take into account while waiting for further robust research. As the study by Kumar and Narayana (2019) is the most suitable in terms of preparing to react to candidate ghosting, these findings should be taken into account. The highest probability for ghosting tendencies was found for the industrial sectors of finance and accounting and marketing and sales. As well, candidates with an academic background in information technology or management studies have higher probabilities to engage in ghosting behavior than other candidates. Accordingly, handling candidates with these attributes should companies lead to improve the touch points and communication with these candidates to strengthen the commitment during the recruitment process and prevent ghosting tendencies from being triggered.

In conclusion, this systematic review clearly demonstrates the necessity for further research to pay attention to this phenomenon on a scientific level. As the subject is new to the academic discourse, the current state of research offers a valuable introduction to candidate ghosting and represents important basic research. To provide a beneficial improvement to all sides, further research is essential to actively address the problem behind the phenomenon in recruitment processes, thus offering relief and improvement to all parties involved. This systematic review reveals the blind spot that comes up when consolidating the research landscape considering previous research findings and the actual problem for organizations when it comes to candidate ghosting in recruitment processes. Clearly demonstrated is the research gap that has to be



investigated to provide solutions for all parties involved. Research has to deliver a reliable and applicable database which companies have to apply in organizational recruitment processes to provide an improved candidate experience and prevent ghosting tendencies from being triggered.

Data Availability Statement

Research included in the systematic review is publicly accessible.

Ethics Statement

1. Interest Declarations

The author did not receive support from any organization for the submitted systematic review.

The author has no relevant financial or non-financial interests to disclose.

2. Funding Source Declaration

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Bridging Efficiency and Innovation: A Case Study of Supply Chain Practices at MEC Logistics

By Md. Mamunur Rashid

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Abstract- Background: In Bangladesh, Third-Party Logistics (3PL) services are important, as they handle logistics duties such as customs, storage, and transport for main businesses. Nevertheless, the fast development in the market requires constant enhancements in service, technology, and employee skills to compete effectively.

Objective: The supply chain practices of MEC Logistics, a long-established 3PL and customs clearing business in Bangladesh, are explored through this case study. The purpose is to study how well MEC Logistics handles its operations to match what its clients desire and overcome market obstacles.

Methods: I collected the data for this study during a three-month internship at MEC Logistics by watching activities and learning through hands-on experience. The key areas under analysis here are customs clearance, ware-housing, and delivery, and the company places itself in the market via Porter's Five Forces framework.

Keywords: supply chain management, MEC logistics, third-party logistics (3PL), warehouse management, customs clearance, Bangladesh, porter's five forces, ERP, logistics technology, operational efficiency.

GJMBR-A Classification: JEL Code: L91, L23



Strictly as per the compliance and regulations of:



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Findings: The company performs successfully with regard to fast customs processing, standard warehouse routines, and strong support for clients such as PGCB, BPDB, DPDC, Huawei, and Ericsson. After all, improving the workforce, bringing in advanced technology, and including safety training keep facing challenges. Because of strong competition and changing customer expectations, the company must prove its resilience.

Conclusion/Implications: To ensure that the supply chain works even better and remains flexible, MEC Logistics ought to introduce ERP systems, automate warehouse operations, and provide regular safety training. By studying this case, providers in emerging markets will be able to improve their resilience, add technology to their operations, and better serve customers.

Keywords: supply chain management, MEC logistics, third-party logistics (3PL), warehouse management, customs clearance, Bangladesh, porter's five forces, ERP, logistics technology, operational efficiency.

I. INTRODUCTION

Today's global market, crowded with competitors, makes efficient supply chain management necessary for companies aiming at better stability, satisfied clients, and higher efficiency. In the words of the Council of Supply Chain Management Professionals, SCM means carefully managing the processes of supply, purchase, making, and delivering goods. Global supply chains experience many difficulties, but Bangladesh is further challenged by limited

infrastructure, quick industrial growth, and the need to adapt to new regulations. Logistics service providers have to continually evolve because of these factors, driving increased overhead.

While logistics is growing in importance for Bangladesh, especially for power generation and telecommunications, little is known about how local 3PL firms handle supply chains under these conditions. With this gap in mind, this case study explores how a 3PL provider operates and responds to key challenges in the new market.

It is widely acknowledged that the progress of logistics infrastructure supports economic growth. Robust logistics and transport networks are crucial requirements for progress in trade competitiveness and sustainability in less advanced economies, according to the World Bank (2020). Other similar problems, like staff skill shortages, technology difficulties, and laws to follow, are discussed in South Asian logistics (Rahman, Karim, & Islam, 2021; Ahmed & Hossain, 2022). Because of these studies, we learn that SCM is particularly complex in developing countries and that we should study firms and how they deal with these difficulties.

An excellent example of this kind of analysis comes from MEC Logistics, which was founded in 1986 and became one of Bangladesh's leading third-party logistics and customs clearing firms. The warehouse cabins owned and managed by MEC that cover over 130,000 square feet are strategically set up for both the government and private organizations in Dhaka. That's why MEC enjoys strong partnerships with key public sector organizations such as PGCB, PGD, and DPDC, together with global companies, including Huawei and Ericsson. A look at MEC's supply chain job area reveals strategies that help them serve clients well in a difficult market setting.

The case study uses information from workplace observations, group interviews, and document analysis over a three-month internship. The analysis is concerned with significant supply chain activities such as getting goods through customs, managing stock, designing and managing warehouses, complying with environmental standards, and following standard procedures.

Due to its managerial role, MEC's competitive place is studied by using Porter's Five Forces framework (Porter, 1979) and the Supply Chain Operations

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Reference (SCOR) model (Supply Chain Council, 2012) to identify both strong and weak areas, mainly concerning integration of technology and the growth of the workforce.

Furthering understanding of MEC Logistics' supply chain management, this study shares insights helpful for those working in logistics and for those studying developing economies. Results suggest that MEC and similar firms can become more resilient and compete better by adopting digital features, rethinking their processes, and providing appropriate training to workers, giving useful solutions to handle current logistics challenges.

II. METHODOLOGY

In this study, participant observation, interviews, surveys and document review are used to examine the supply chain practices of MEC Logistics. For three months, the research was conducted as an internship which allowed me to become involved with several departments and their processes.

a) *Research Design*

An exploratory case study was selected following Yin's framework (2014) to analyze in detail MEC Logistics' supply chain operations in a developing economy. Three sectors are centered in scope: the processes of obtaining products, handling delivery, managing warehouses, and transporting goods to customers. We chose these areas because they are key in delivering MEC's services and because they let us explore challenges and improvements in the supply chain. This study aims to bring together theory and actual logistics practices in an ever-changing industry.

b) *Data Collection Methods*

In Participant Observation, the researcher joined and watched workers for prolonged periods in each of the departments. Because of this approach, I could practice routine work tasks and coordination among different departments. Both notes and reflective journals were kept continuously to document what was going on in the fieldwork.

Ten semi-structured interviews were completed with important personnel such as the Senior Manager of Operations & Development, Warehouse Coordinators, Logistics Officers, and Customs Clearance staff. People involved in the study were selected to cover a range of job roles and knowledge that matter in supply chain work. Change managers and team members were interviewed about how things were done operationally, what challenges they experienced, and their views on the organization's effectiveness. Before starting interviews, we got informed consent from participants, guaranteed their confidentiality, and told them they could withdraw whenever they liked. As well as the qualitative interviews, a 30-person questionnaire was

sent to workers in various departments. Based on SCM literature and tested for accuracy, the questionnaire asked employees about warehouse operations, their satisfaction, and how satisfied clients were. Information about participants was removed to ensure their privacy.

The firm's internal papers, including SOPs, inventory codes, and trucking manifests, were all methodically looked at one by one. Materials were selected purposively, since they were most relevant to the three central sectors. We used SCM frameworks to look for operational standards, verification of compliance, and details on how processes differed. We also looked at the materials MEC publishes publicly, such as its website and marketing materials, to better understand its approach to clients and market positioning. Ethics were respected, allowing participants to decide to be involved, confidentially share company details, and have safe processing of the gathered data. Access to company documents was officially permitted by MEC Logistics management.

2.3 Data Analysis Techniques

III. COMPANY OVERVIEW

Founded in Bangladesh in 1986, MEC Logistics is a 3PL company that keeps specializing in C&F, warehousing and inland transportation services. During the last few years, MEC has established a reliable reputation as a preferred logistics partner for several important infrastructure and telecommunications projects for both the public and private sectors.

a) *Core Business and Services*

At MEC Logistics, we value a wide range of logistics solutions - customs services, forwarding, warehousing, delivering items, distribution, and handling inventory. A strong point of MEC is its certified assistance for customs clearance at major seaports in Bangladesh, handling different rules, duty fees, and timely payment arrangements. Because of this knowledge, we can avoid demurrage fees and get cargo out quickly, an important benefit in Bangladesh. There are warehouse facilities from the company in Narayangonj, Tongi, and Chattogram, and these cover more than 300,000 square feet together. Many kinds of cargo can be stored safely in these warehouses, including telecom and electrical equipment, which is facilitated by adapting the storage layout. To go along with its assets, MEC uses its in-house fleet and licensed 3PL firms under set contractual agreements to maintain accountability and quality performance. To improve operations and transparency, MEC uses WMS, which works with barcoding tools, barcode scanners, and an electronic inventory management system. Currently, the WMS is based on a vendor product, yet plans exist to replace it with an automated platform that suits changing industry expectations. It also has value-added services such as tracking shipment progress live,

managing shipping routes, and handling relationships with drivers, which in total enhance both the reliability of delivery and communication with customers. Delivery success levels are above 95% and lead times are in line with others, yet these data are private. Because of its skills in handling large-scale supply chain functions, MEC is a top choice for leading multinationals like Huawei Technologies Bangladesh Ltd. and Ericsson Bangladesh Ltd.

b) *Organizational Structure*

The company MEC Logistics is privately owned and has 51 employees split among senior management, operations, warehouse management, Management Information Systems (MIS), finance, administration and customer service departments. With this system, functions team up more closely which helps in coordinating the whole supply chain process.

c) *Strategic Clients and Market Position*

In Bangladesh, MEC partners with government-run utility firms such as PGCB, BPDB and DPDC and also with international private-sector leaders such as Huawei Technologies and Ericsson Bangladesh. Because the company has successfully handled over half a dozen huge infrastructure projects, it is now one of the leading logistics businesses in Bangladesh. MEC's clearance process saves time, lowers charges for keeping goods unloaded and ensures they are always clear and simple for clients.

d) *Competitive Advantage*

MEC relies on years of knowledge, detailed knowledge of local shipping rules, easily accessible warehouses and transport and a proven group of customers worldwide to remain competitive. With logistics moving quickly towards digital solutions, MEC realizes it must improve its WMS quickly and always focus on employee training. It helps MEC allow its operations to follow best practices worldwide, putting an emphasis on automation, receiving data instantly and finding cost-saving ways to do so. Combining its heritage with new technologies and supportive partnerships- governed by clear SLAs- MEC hopes to respond quickly to current demands.

IV. FINDINGS AND DISCUSSION

In this section, MEC Logistics' performance regarding customs clearing & forwarding, warehouse management, and transportation is presented. The conversation is made better by taking employee opinions and comparing them to the industry's best practices. Alongside describing day-to-day tasks, this section recognizes strengths and weaknesses, links the firm's situation to supply chain literature, and seeks ways to advance the supply chain using modern techniques.

a) *Customs Clearing and Forwarding (C&F)*

MEC Logistics has designed a uniform way of clearing customs at Bangladesh's large ports, involving Import General Manifest (IGM) documents, preparation of Bill of Entry (B/E), and regular cooperation with customs authorities for duty management. Being experienced in customs processes makes their work faster, strong connections with authorities help, and their accurate paperwork maintains costs. But because average clearance times and reductions in duty cost are missing in the system, judges have limited grounds to assess if it is working well. Besides, there are still operational problems because clients' documents arrive late, and there are uncommon mistakes caused by manual data handling, yet these issues and impacts are not regularly tracked.

b) *Warehousing Operations*

A network of warehouses controlled by Standard Operating Procedures (SOPs) is run by MEC to manage the flow of products in and out of the warehouse, their storage, and control of stock. RF scanners allow for cargo tracking, and system procedures are adjusted to match important clients' supply management systems, such as Huawei's CES platform. Client and product information govern the organization of warehouses, and inventory is updated each day using cargo cards and an Excel log. Team leaders and staff split the work of picking, packaging, and delivering, with detailed records and clear documentation supporting them. Still, because warehouse operations are not fully automated and include paper-based methods, these facilities are at risk. Due to this gap, people may slip up more often, take greater time to complete tasks, and be unable to scale efficiently during higher demand.

c) *Transportation and Delivery*

MEC relies on both its own vehicles and those it gets from external providers; all being managed under Service Level Agreements (SLAs) designed to hold everyone responsible. It helps ensure that the delivery team and clients are in sync, guided by standard delivery forms (DNs and checklists) and good monitoring and reporting. Road congestion and insufficient vehicles from nearby car rental shops cause many challenges. The lack of these tools within the organization reduces how efficiently and transparently transport operations function.

d) *Employee Feedback and Survey Insights*

When I surveyed thirty employees using a structured questionnaire, the findings were that they felt both teamwork and transparency in operations were high. Many discussions returned to the need for disciplined safety courses, proper equipment use training and modern systems to trim down paperwork.

e) *SCM Framework Alignment*

Among its activities, MEC includes sourcing, transportation, warehousing, and managing returns as basic SCM parts. Nevertheless, organizations still lack fully developed strategic planning, quick ways to distribute information, and the use of digital SCM tools.

f) *Comparison to Best-in-Class Practices*

Much like other companies, MEC can deliver services, but its current tools and organization are not as advanced as global standards in automation, data handling, and how services are run. Not many companies use WMS or ERP systems, no Lean logistics or 5S warehouse practices exist, and visibility is limited without the help of prescriptive analytics.

V. PORTER'S FIVE FORCES ANALYSIS

This section applies Porter's Five Forces framework to critically analyze the competitive dynamics shaping MEC Logistics' position in Bangladesh's rapidly evolving logistics sector. While the framework offers a foundational lens, integrating data insights and forward-looking considerations provides a more robust understanding of MEC's competitive threats and strategic opportunities.

a) *Threat of New Entrants - Low to Medium*

Entry barriers remain significant for new players aiming to enter MEC's core areas- customs clearance, warehousing, and fleet operations- due to the substantial capital investment needed for licenses, infrastructure, and fleet acquisition, alongside the challenge of establishing client trust and compliance with customs regulations. However, recent government reforms aimed at streamlining trade facilitation, public-private infrastructure initiatives, and relaxed regulatory policies are gradually lowering these traditional barriers. Simultaneously, digital disruptors and the rise of tech-enabled 3PL startups leverage technology to bypass some conventional hurdles, entering the market with relatively low capital outlay and agile service models. For example, several new logistics startups in Bangladesh have capitalized on cloud-based platforms and automated customs clearance tools to gain rapid traction.

Strategic Insight: MEC should consider fostering strategic alliances or investing in technology incubators to collaborate with emerging digital entrants, transforming potential threats into innovation opportunities.

b) *Bargaining Power of Suppliers - High*

MEC's reliance on a limited pool of suppliers for vehicles, fuel, and leased warehouse spaces exposes it to high supplier power. Fluctuations in diesel prices, labor availability, and rental costs directly impact operational expenses and service reliability. However, this analysis currently lacks a quantitative assessment of how much of MEC's total operating costs are

attributable to these supplier inputs, nor does it evaluate existing contractual safeguards such as long-term agreements or fuel hedging mechanisms. Additionally, MEC's absence of vertical integration- such as owning fleets or warehouses- exacerbates supplier dependency, limiting its negotiating leverage.

Strategic Insight: Implementing a supplier performance scorecard and exploring digital procurement platforms can improve vendor management and reduce over-reliance on individual suppliers. Moreover, strategic investments in owned assets or long-term contracts may mitigate cost volatility.

c) *Bargaining Power of Buyers - High*

Major clients like Huawei, Ericsson, PGCB, and BPDB, due to their large shipment volumes and access to alternative logistics providers, wield substantial bargaining power. The availability of competitive bids and transparent rate comparisons pressures MEC to maintain competitive pricing without compromising service quality. To differentiate in this highly buyer-driven market, MEC must prioritize customization, reliability, and value-added services to strengthen client loyalty and reduce churn.

Strategic Insight: Enhancing client relationships through dedicated account management, customized reporting dashboards, and regular business reviews can deepen engagement and foster long-term partnerships.

d) *Threat of Substitutes - High*

Clients' ability to internalize logistics, select alternative 3PL providers, or switch transport modes (road, rail, air) poses a significant substitution risk. Competitors like Total Asia, MMI Logistics, Step One, and MKK Logistics aggressively compete on price and technology adoption, further intensifying this threat. MEC must continuously innovate- embracing advanced technologies, improving customer responsiveness, and tailoring services- to maintain its customer base and mitigate substitution risks.

Strategic Insight: Continuous investment in technology adoption and customer-centric innovation is critical to counteract substitute offerings and retain market relevance.

e) *Industry Rivalry - High*

The Bangladeshi logistics sector is marked by fierce rivalry, driven by expanding import volumes, telecom sector growth (including 5G rollout), and burgeoning e-commerce demand. Limited product differentiation among 3PL providers fuels frequent price wars and aggressive bidding strategies. Industry players are increasingly deploying digital systems and cost optimization initiatives, causing rapid shifts in market share tied closely to service quality and innovation capabilities.

Strategic Insight: MEC should pursue differentiation through superior reliability, safety standards, and expedited service delivery, supported by technology-enabled operational excellence.

Table 1: Summary of Porter's Analysis

Force	Level of Threat	Strategic Implication
Threat of New Entrants	Low-Medium	Focus on operational efficiency to defend market share
Bargaining Power of Suppliers	High	Secure long-term vendor contracts and develop own assets
Bargaining Power of Buyers	High	Maintain service quality and offer value-added services
Threat of Substitutes	High	Innovate in tech adoption and customer service
Industry Rivalry	High	Differentiate through reliability, safety, and speed

f) *Strategic Recommendations for MEC Logistics*

Building on Porter's analysis and current supply chain assessment, MEC Logistics can strengthen its competitive position and operational resilience through the following initiatives:

1. *Adopt an Integrated ERP System:* Implementing a comprehensive ERP platform will enable real-time management of logistics, warehousing, and financial operations, enhancing visibility and interdepartmental coordination.
2. *Deploy a Modern Warehouse Management System (WMS):* Investing in scalable WMS technology with barcode scanning and real-time inventory tracking will reduce errors, accelerate processing, and optimize warehouse utilization.
3. *Enhance Workforce Training and Certification:* Structured training programs focused on safety, documentation, and equipment handling will improve operational reliability and compliance.
4. *Institutionalize Safety and Compliance:* Develop formal EHS policies, conduct routine safety audits, and enforce PPE usage to safeguard employees and meet regulatory standards.
5. *Leverage Advanced Transport Management Technologies:* Integrate GPS route optimization, load planning software, and driver tracking apps to improve delivery precision, reduce costs, and increase transparency.
6. *Implement a Performance Metrics Dashboard:* Track KPIs such as on-time delivery, inventory accuracy, customs clearance time, and labor productivity to drive continuous improvement.
7. *Strengthen Client Relationship Management:* Assign dedicated account managers, provide customized SLAs and reporting tools, and hold regular client business reviews to deepen partnerships.
8. *Explore Green Logistics Initiatives:* Adopt sustainability measures like route optimization to lower carbon footprints, energy-efficient warehousing, and partnerships with eco-friendly transport vendors.

By embracing these data-driven and forward-looking strategies, MEC Logistics can effectively

navigate competitive pressures, enhance operational efficiency, and position itself as a leading, innovative logistics provider in Bangladesh's dynamic market environment.

VI. CONCLUSION

This case study looks closely at the supply chain methods applied by MEC Logistics, the biggest third-party logistics provider in Bangladesh. Personal observations during internships, visits to the site, and the company's documentation are all used in the study to focus on MEC's strong areas of customs clearance, storing goods, and transportation. Completing logistics tasks for clients such as Huawei, Ericsson, PGCB, and BPDB has allowed the company to stay at the forefront of infrastructure development in Bangladesh. With the use of standard tasks, strict following of processes, and strong record-keeping, MEC is now able to control demurrage, make their shipments on time, and better manage their stock. Even so, findings indicate there is plenty of scope to improve, mainly in automation, integrating new technologies, developing the workforce, and ensuring safety at work. Looking at Porter's Five Forces, we notice the market is extremely competitive because buyers and sellers have a lot of power, and there are many alternatives to the product. Because of this, MEC must focus on using advanced warehouse systems, resource planning instruments, and providing targeted training for its workers. Having a data-driven approach to interact with customers will be essential, since the industry is becoming more crowded.

At present, MEC Logistics needs to take decisive actions because the industry is being rapidly reformed by technology, new market needs, and changes in regulations. For MEC to continue leading, it needs to add new features like IoT asset monitoring, AI for planning routes, and accessible digital customer features. In addition, if workers keep learning and if data is incorporated into decision-making, the organization will become stronger and more flexible. The study's recommendations make sense for MEC and comparable businesses running in emerging markets, but it admits that estimating quantitative risk and reviewing future impacts can be limited. More research might

explore the link between using sustainability and the use of digital systems in improving the performance of the supply chain.

In conclusion, MEC Logistics stands at a critical juncture where thoughtful investments in technology, people, and customer-centric innovation will determine its future success. This research contributes both practical guidance and a conceptual framework to help logistics providers in emerging economies navigate the delicate balance between efficient operations and strategic adaptability.

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Impact of the Implementation of the Business Simulator on the Skills Development of UnISCED Students

By Jorge Serrão Conhaque João, Helga Libânio dos Santos,
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Abstract- This article discusses the impact of implementing a business simulator on the development of skills among students at the Open University ISCED in Mozambique, with the aim of fostering high-quality university education. The study aimed to evaluate the impact of the business simulator's implementation on the development of students' competencies, skills developed in the System of Business Practices and Entrepreneurship (SPEE) provided by the Institute of Technologies and Services and Innovation (ITIS), a partner of UnISCED. The study involved 124 students from the Human Resource Management and Business Management courses. Primary data were collected through online questionnaires (Google Forms), interviews conducted online via Google Meet, and the direct observation method through in loco monitoring during online sessions. The results indicate a positive perception among students regarding the simulator's effectiveness in enhancing their practical and theoretical skills, despite technical difficulties encountered. The implications for higher education in Mozambique are discussed, along with the study's limitations and suggestions for future research.

Keywords: *business simulator, higher education, practical skills.*

GJMBR-A Classification: *JEL Code: I23, M53*



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Impact of the Implementation of the Business Simulator on the Skills Development of UnISCED Students

Impacto da Implementação do Simulador Empresarial no Desenvolvimento de Competências dos Estudantes da UnISCED

Jorge Serrão Conhaque João ^α, Helga Libânio dos Santos ^σ, Domingos Arnaldo Zaqueu ^ρ,
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Resumo- O presente artigo trata sobre o impacto da implementação do simulador empresarial no desenvolvimento de competências dos estudantes da Universidade Aberta ISCED em Moçambique, com a finalidade de fomentar uma educação universitária de qualidade, onde o estudo teve como objectivo avaliar o impacto da implementação do simulador empresarial no desenvolvimento de competências dos estudantes, habilidade desenvolvidas no Sistema de Práticas Empresariais e Empreendedorismo (SPEE) fornecido pelo Instituto de Tecnologias e Serviços e Inovação (ITIS) como parceira da UnISCED. O estudo envolveu 124 estudantes dos cursos de Gestão de Recursos Humanos e Gestão de Empresas, cujos dados primários foram colectados através de questionários online (Google forms), técnica de entrevista que foram realizadas online, por via do google meet e o método de observação directa através do acompanhamento in loco, por via das sessões online. Os resultados indicam uma percepção positiva dos estudantes sobre a eficácia do simulador em melhorar as suas habilidades práticas e teóricas, apesar das dificuldades técnicas encontradas. As implicações para o ensino superior em Moçambique são discutidas, juntamente com as limitações do estudo e sugestões para pesquisas futuras.

Palavras-chave: simulador empresarial, ensino superior, competências práticas.

Abstract- This article discusses the impact of implementing a business simulator on the development of skills among students at the Open University ISCED in Mozambique, with the aim of fostering high-quality university education. The

study aimed to evaluate the impact of the business simulator's implementation on the development of students' competencies, skills developed in the System of Business Practices and Entrepreneurship (SPEE) provided by the Institute of Technologies and Services and Innovation (ITIS), a partner of UnISCED. The study involved 124 students from the Human Resource Management and Business Management courses. Primary data were collected through online questionnaires (Google Forms), interviews conducted online via Google Meet, and the direct observation method through in loco monitoring during online sessions. The results indicate a positive perception among students regarding the simulator's effectiveness in enhancing their practical and theoretical skills, despite technical difficulties encountered. The implications for higher education in Mozambique are discussed, along with the study's limitations and suggestions for future research.

Keywords: business simulator, higher education, practical skills.

1. INTRODUÇÃO

O presente artigo, surge no contexto do Ensino Superior em Moçambique que tem experimentado um crescimento significativo nas últimas décadas, refletindo um esforço contínuo para melhorar a qualidade e a acessibilidade da educação superior. De acordo com o Instituto Nacional de Estatística (INE) de Moçambique, o número de instituições de ensino superior no país aumentou de 21 em 2005 para mais de 50 em 2020, abrangendo tanto universidades públicas quanto privadas (INE, 2021). Este crescimento tem sido acompanhado por um aumento no número de estudantes matriculados, que passou de aproximadamente 36.000 em 2005 para mais de 180.000 em 2020 (Banco Mundial, 2020).

UnISCED é uma instituição de ensino superior de classe A, de natureza privada, criada pelo Decreto nr.27/2021, de 06 de maio pelo Conselho de Ministros, com a sua sede na cidade da Beira, Província de Sofala e conta com mais de 9 anos na destacada experiência na educação virtual, promove um sólido

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Área: Tecnologias educativas e Recursos educacionais abertos

programa de educação que permite os estudantes a frequentarem 2 programas (Licenciaturas e Mestrados) desenvolvidas na modalidade à distância em 24 áreas de conhecimentos.

No entanto, esse aumento no acesso ao ensino superior também trouxe desafios, especialmente no que diz respeito à qualidade da educação e à empregabilidade dos graduados. Estudos indicam que há uma disparidade significativa entre o conhecimento teórico adquirido pelos estudantes e as habilidades práticas exigidas pelo mercado de trabalho (Simango, 2019). Este descompasso é um fator crítico que contribui para as altas taxas de desemprego entre os graduados moçambicanos, que alcançavam cerca de 25% em 2020 (INE, 2021).

Nesse contexto, a introdução de tecnologias educacionais inovadoras, como os simuladores empresariais, pode desempenhar um papel crucial na melhoria da qualidade do ensino e na preparação dos estudantes para o mercado de trabalho. Simuladores empresariais são plataformas interativas que permitem aos estudantes experimentar cenários empresariais realistas, tomar decisões gerenciais e observar as consequências de suas ações em um ambiente seguro e controlado (Faria et al., 2009). Esta metodologia de ensino é baseada nos princípios da aprendizagem experiencial, que enfatizam a importância da experiência prática no processo de aprendizagem (Kolb, 1984).

Portanto, a UnISCED utiliza nas suas actividades de ensino, as mais avançadas metodologias e tecnologias de ensino a distância orientadas para a educação sem fronteiras geográficas nem barreiras físicas e para fomentar uma formação universitária com qualidade, estabelece alianças com instituições e empresas, onde com o Instituto de Tecnologia, Serviços e Inovação introduziu um Sistema de Práticas Empresariais e Empreendedorismo - SPEE (simulação de cenários reais). Esta iniciativa visa desenvolver competências e habilidades práticas dos estudantes nos diversos cursos ministrados, preparando-os melhor para os desafios do mercado de trabalho. Este estudo avalia o impacto dessa implementação, investigando a eficácia do simulador empresarial no desenvolvimento de competências práticas e teóricas dos estudantes.

Quanto à metodologia, o estudo envolveu 124 estudantes dos cursos de Licenciaturas em Gestão de Recursos Humanos e de Gestão de Empresas que participaram do módulo de empreendedorismo utilizando o simulador. Os dados foram coletados por meio da aplicação de questionários por inquérito online através do Google forms, as entrevistas foram realizadas online, por meio de google meet e a técnica de observação indirecta foi realizada, através das avaliações dos ficheiros submetidos nas respectivas etapas/fases e do acompanhamento nas sessões

online para esclarecimento das dúvidas relativas às actividades no simulador, abordando aspectos como o gênero, faixa etária, curso frequentado, ano de estudo, frequência e duração de uso do simulador, e a percepção dos estudantes sobre a facilidade de uso e a eficácia do simulador na compreensão dos conceitos teóricos e no desenvolvimento de habilidades práticas.

Os resultados deste estudo são fundamentais para entender como ferramentas inovadoras podem melhorar a qualidade do ensino superior em Moçambique. A análise dos dados coletados fornece insights valiosos sobre a aceitação e o impacto do simulador empresarial entre os estudantes, destacando suas percepções sobre as competências adquiridas e as dificuldades enfrentadas durante o uso da ferramenta.

Além disso, este estudo contribui para a literatura sobre métodos pedagógicos no ensino superior, oferecendo evidências empíricas sobre os benefícios e desafios da utilização de simuladores empresariais. As implicações dos resultados para a teoria e prática no ensino superior são exploradas, juntamente com as limitações do estudo e sugestões para futuras pesquisas.

Assim, este estudo não apenas avalia a eficácia de uma ferramenta específica, mas também serve como um ponto de referência para outras instituições de ensino que buscam incorporar tecnologias similares em seus currículos. Com base nos achados, espera-se fornecer recomendações práticas que possam melhorar a aplicação de simuladores empresariais e, conseqüentemente, elevar a qualidade da educação oferecida aos estudantes.

O uso de simuladores empresariais no ensino superior busca proporcionar aos estudantes uma experiência prática que complementa o conhecimento teórico adquirido em sala de aula. Este estudo analisa o impacto dessa ferramenta no desenvolvimento de competências dos estudantes da Universidade Aberta ISCED em Moçambique, abordando questões relacionadas ao gênero, faixa etária, curso, ano de frequência, frequência e duração de uso do simulador, bem como as percepções dos estudantes sobre a eficácia do simulador.

II. REFERENCIAL TEÓRICO

A utilização de simuladores empresariais no ensino superior é uma prática pedagógica que tem ganhado destaque nas últimas décadas. Simuladores empresariais são ferramentas interativas que replicam cenários empresariais reais, permitindo aos estudantes tomar decisões gerenciais em um ambiente controlado (Faria et al., 2009). Esta metodologia de ensino é baseada nos princípios da aprendizagem experiencial, que enfatizam a importância da experiência prática no processo de aprendizagem (Kolb, 1984).

Segundo Faria e Wellington (2004), os simuladores empresariais proporcionam um ambiente seguro onde os estudantes podem experimentar diferentes estratégias e observar os resultados de suas decisões sem correr riscos reais. Eles são particularmente eficazes no desenvolvimento de habilidades práticas, como tomada de decisão, resolução de problemas e planejamento estratégico (Anderson & Lawton, 2009).

A eficácia dos simuladores empresariais no ensino superior tem sido amplamente estudada. Em uma revisão da literatura, Pasin e Giroux (2011) concluíram que esses simuladores melhoram significativamente a retenção de conhecimento e a aplicação prática de conceitos teóricos. Além disso, um estudo de Mitchell (2004) demonstrou que estudantes que utilizam simuladores empresariais têm um desempenho melhor em avaliações de habilidades práticas do que aqueles que participam apenas de aulas teóricas.

A integração de simuladores empresariais no currículo também pode aumentar o engajamento dos estudantes. De acordo com Alon et al. (2012), a interatividade e a natureza competitiva dos simuladores mantêm os estudantes motivados e envolvidos no processo de aprendizagem. Isso é corroborado por estudos que mostram uma correlação positiva entre o uso de simuladores empresariais e a satisfação dos estudantes com o curso (Gosen & Washbush, 2004).

III. PROCEDIMENTOS METODOLÓGICOS

Neste artigo, estudo é exploratório e com uma abordagem mista (qualitativa e quantitativa). A observação indirecta foi possível obter dados sobre o

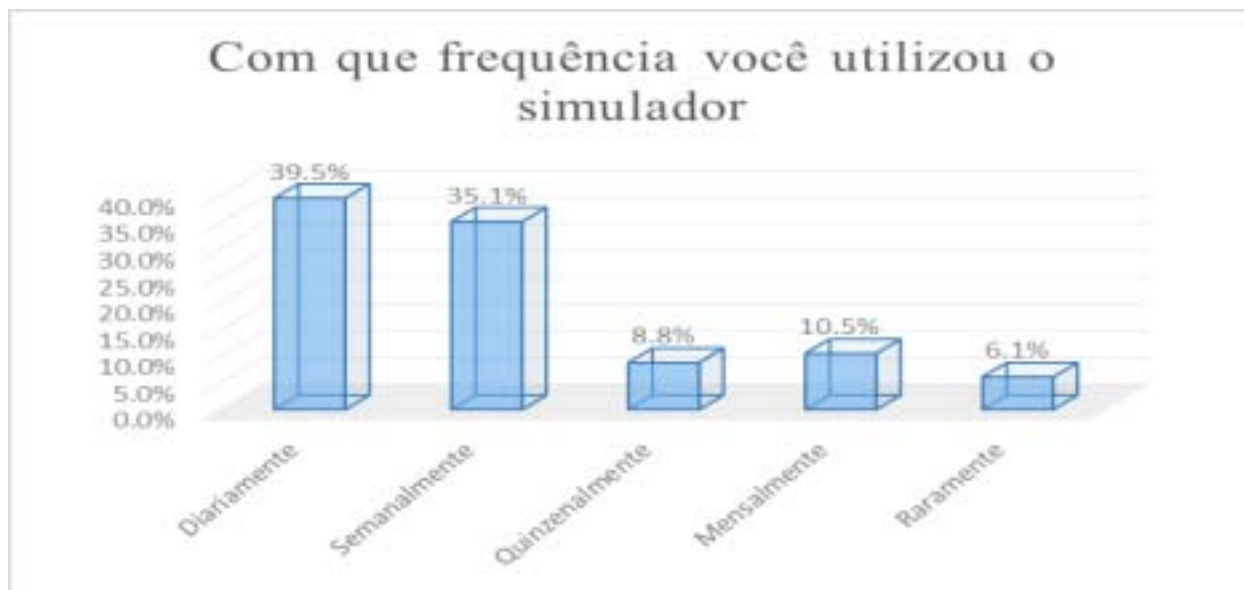
ponto de situação sobre as competências adquiridas, conhecimento sobre funcionalidades do simulador, consolidação entre a teoria e a prática dos estudantes. As entrevistas foram realizadas para colher informações sobre as experiências no uso do simulador empresarial. Para este trabalho, foi usado os seguintes documentos: livros, artigos de revistas indexadas publicadas sobre o objecto em causa. O procedimento bibliográfico tomou como base o arrolamento das teorias variadas conceituadas na matéria de simuladores empresariais, competências práticas, qualidade de ensino. Os questionários foram aplicados nos estudantes sobre o impacto do simulador empresarial no desenvolvimento das competências digitais e práticas para os desafios no mercado de trabalho.

Para este artigo foi escolhida a amostra probabilística simples, trabalhando com 124 estudantes dos 3 anos, cursos de licenciatura em Gestão de Recursos Humanos e Gestão de Empresas.

A colecta de dados primários foi nos dias 20 a 24 de maio de 2024. Seguido de processamento e tabulação.

IV. RESULTADOS E DISCUSSÃO

Dos 124 participantes, 66,4% são do sexo feminino e 33,6% do sexo masculino. A faixa etária dos participantes distribui-se da seguinte forma: 40% entre 33-40 anos, 27% acima de 40 anos, 25,2% entre 28-32 anos e 7,8% entre 23-27 anos. Em relação ao curso frequentado, 60% estão a frequentar o curso de Gestão de Recursos Humanos e 40% em Gestão de Empresas. Quanto ao ano de frequência, 48,2% estavam no 4º Ano e 51,8% no 3º Ano.

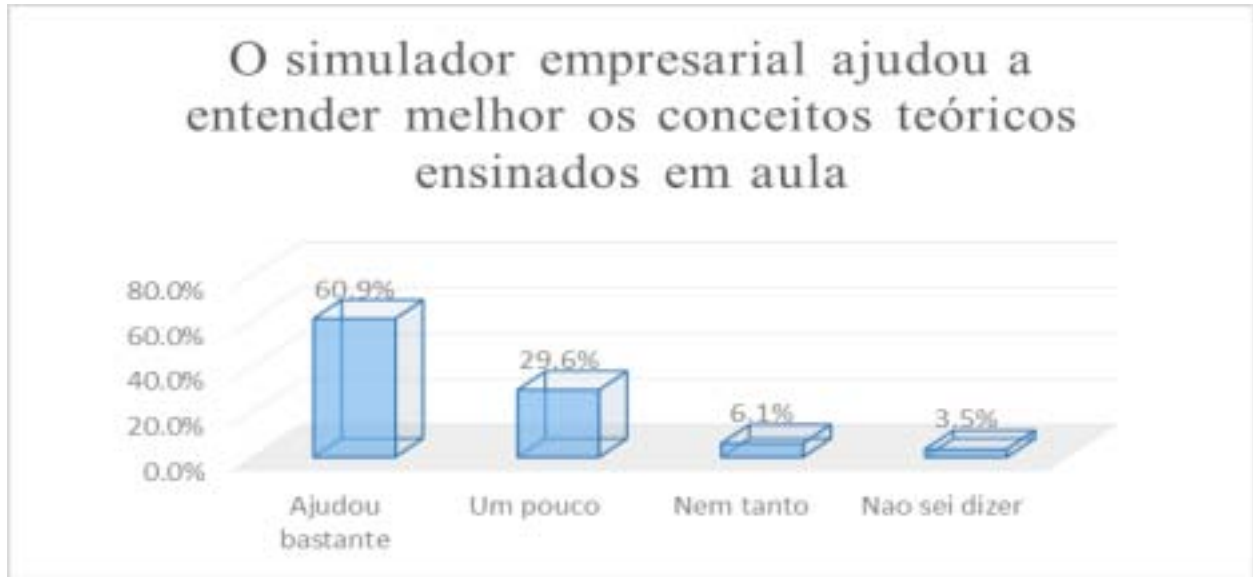


Fonte, autores (2024)

Gráfico de Frequência de Utilização do simulador

A utilização do simulador variou, com 39,5% utilizando-o diariamente, 35,1% semanalmente, 8,8% quinzenalmente, 10,5% mensalmente e 6,1% raramente.

Em termos de duração, 68,1% usaram o simulador por 1-3 meses, 14,7% por menos de um mês, 9,5% por 4-6 meses e 7,8% por mais de 6 meses.

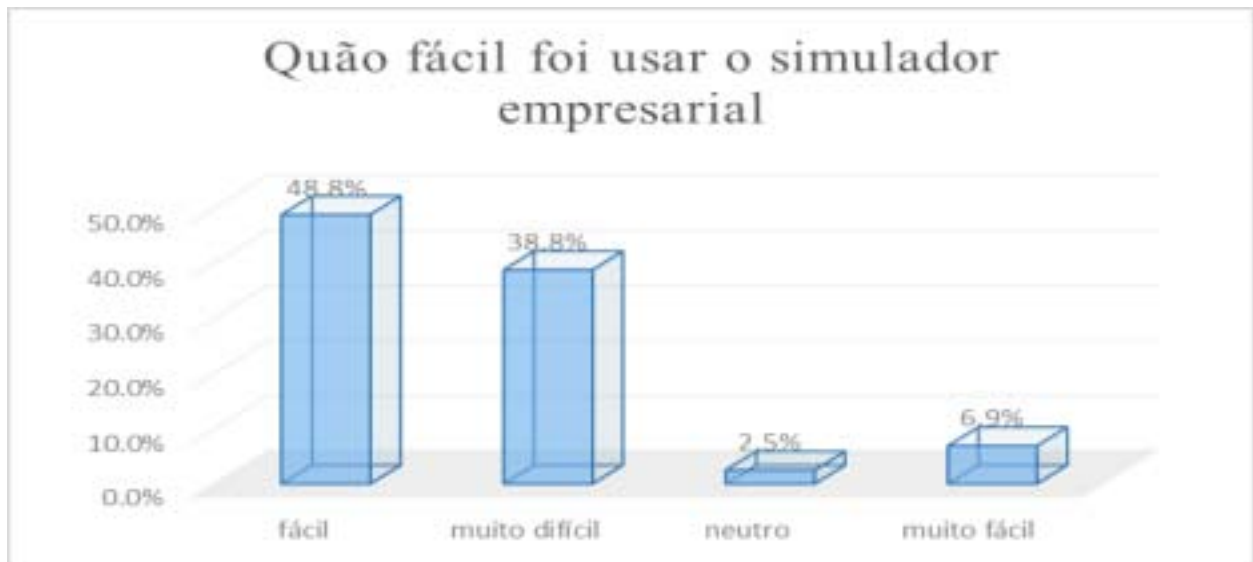


Fonte, autores (2024)

Gráfico de conciliação de conceitos teóricos e práticos ensinados

Sobre a eficácia do simulador, 60,9% afirmaram que ajudou bastante a entender os conceitos teóricos, 29,6% que ajudou um pouco, 6,1% que nem tanto e 3,5% que não sabem dizer. No que tange à melhoria

das habilidades práticas, 60% responderam afirmativamente, 31,3% disseram que melhorou algumas habilidades, enquanto 4,3% afirmaram que não teve impacto significativo ou não tinham certeza.



Fonte, autores (2024)

Gráfico de Facilidade do uso do simulador

Quanto à facilidade de uso, 44,8% consideraram fácil, 38,8% difícil, 6,9% muito difícil, 2,5% neutro e 6,9% muito fácil. A recomendação do simulador para outras universidades foi alta, com 90,5% dos estudantes recomendando seu uso.



Fonte, autores (2024)

Gráfico de Competências Desenvolvidas

Em termos de competências desenvolvidas, 3,4% responderam tomada de decisão, 6% planejamento estratégico, 18,1% plano de negócio, 7,8% processo de legalização de empresas, 3,4% gestão financeira, 3,6% trabalho em equipe, 0,9% auditoria, 0,9% resolução de problemas, 3,4% compra e venda, 19,8% todo processo relacionado ao Recursos Humanos de uma empresa, e 33,6% todas as opções acima. Relativamente à preparação para enfrentar desafios reais no mercado de trabalho, 31% concordam plenamente, 60,3% concordam, 6% neutro e 2,6% discordam.

As principais dificuldades apontadas foram a falta de familiaridade com a ferramenta (51,3%), a complexidade dos cenários simulados (23,5%) e 8,7% afirmaram que não encontraram nenhuma dificuldade.

a) Entrevista

A entrevista foi realizada com 2 estudantes através da plataforma virtual Google meet sobre as suas experiências no uso do simulador empresarial, estes responderam nos seguintes termos.

E1. "Para mim não foi fácil acessar ao simulador primeiramente tive muitas dificuldades foi pedindo explicação aos colegas que já haviam conseguido acessar o simulador e tutores acabei conseguindo é uma boa experiência e bem enquadrada o simulado facilita uma boa organização e uma boa gestão empresarial".

E2. "Não foi fácil usar o simulador empresarial, mas deu para obter alguma informação como fazer uma boa gestão financeira do stock".

Pode-se notar nas respostas dos entrevistados que a priori houve dificuldade na imersão ao uso do simulador empresarial, mas depois conseguiram superar as dificuldades através da interação com os colegas e tutores através das sessões de esclarecimento de dúvidas organizadas semanalmente pelos tutores das disciplinas.

b) Discussão

Os resultados indicam uma percepção positiva geral sobre o impacto do simulador empresarial no desenvolvimento de competências práticas e teóricas. A predominância de estudantes do sexo feminino (66,4%) sugere uma maior adesão deste grupo à iniciativa. A faixa etária predominante (33-40 anos) pode refletir uma maior disposição ou necessidade de aprimoramento profissional nessa fase da vida.

A distribuição dos estudantes entre os cursos de Gestão de Recursos Humanos (60%) e Gestão de Empresas (40%) destaca a relevância do simulador para ambos os cursos. A divisão quase igual entre estudantes do 3º e 4º ano indica que o simulador foi utilizado por estudantes em diferentes estágios do curso, o que pode enriquecer a experiência de aprendizagem ao longo do programa.

A utilização frequente do simulador (diária e semanal) e a duração de uso (1-3 meses) mostram um engajamento significativo, crucial para o desenvolvimento de competências práticas. A percepção positiva sobre a ajuda do simulador na compreensão dos conceitos teóricos (60,9% ajudou bastante) e na melhoria das habilidades práticas (60% sim) corrobora a eficácia da ferramenta.

A facilidade de uso recebeu avaliações mistas, com 44,8% considerando fácil e 38,8% difícil, destacando a necessidade de melhorias na interface ou no suporte técnico. A recomendação elevada (90,5%) para outras universidades indica uma aceitação geral da ferramenta.

V. CONSIDERAÇÕES FINAIS

A implementação do simulador empresarial na Universidade Aberta ISCED mostrou-se eficaz no desenvolvimento de competências práticas e teóricas dos estudantes. Apesar das dificuldades técnicas relatadas, a maioria dos estudantes percebeu uma melhoria significativa nas suas habilidades e recomendaria a ferramenta para outras instituições. Estes resultados destacam o potencial dos simuladores empresariais como uma ferramenta pedagógica valiosa no ensino superior em Moçambique.

Os resultados deste estudo sugerem que o uso de simuladores empresariais pode ser uma prática efetiva para o desenvolvimento de competências práticas e teóricas no ensino superior em Moçambique. A integração de ferramentas práticas como simuladores no currículo pode aumentar a preparação dos estudantes para enfrentar desafios reais no mercado de trabalho, potencialmente reduzindo a lacuna entre teoria e prática.

A grande limitação deste estudo é o foco em uma única instituição e a predominância de dois cursos, o que pode não representar a totalidade do ensino superior em Moçambique. Estudos futuros devem considerar uma amostra mais ampla e diversificada, incluindo diferentes instituições e cursos, para validar e expandir os achados. Além disso, a investigação de métodos para melhorar a facilidade de uso do simulador pode ser benéfica.

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Reducing Food Waste in College Cafeterias through Design Thinking Process

By Mahesh MV, Nishanth AN, Sai Vihar KS & Vaishnavi K

Chapter 1- Introduction- Food waste has emerged as a pressing global problem with significant repercussions for the environment, economy, and society. Due to the high volume of meals served daily and the prevalence of buffet-style or all-you-care-to-eat dining models, college and university campuses, particularly their dining facilities, significantly contribute to this issue. In such settings, large quantities of unfinished food are thrown away due to inconsistencies in meal preferences, a lack of awareness, and excessive portion sizes. According to the Food and Agriculture Organization, approximately one-third of all food produced globally is wasted, with institutional settings like universities being key contributors. Food waste occurs at multiple stages-during preparation, consumption, and service in college cafeterias. Food waste disposal also strains natural resources and contributes to greenhouse gas emissions through landfills, in addition to raising ethical questions about throwing away food that can be eaten while millions of people suffer from hunger. Addressing food waste in college dining systems requires a multi-faceted approach involving behavior change, improved food service management, technology integration, and awareness campaigns.

GJMBR-A Classification: JEL Code: Q53



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Reducing Food Waste in College Cafeterias through Design Thinking Process

Mahesh MV ^α, Nishanth AN ^σ, Sai Vihar KS ^ρ & Vaishnavi K ^ω

CHAPTER 1- INTRODUCTION

Food waste has emerged as a pressing global problem with significant repercussions for the environment, economy, and society. Due to the high volume of meals served daily and the prevalence of buffet-style or all-you-care-to-eat dining models, college and university campuses, particularly their dining facilities, significantly contribute to this issue. In such settings, large quantities of unfinished food are thrown away due to inconsistencies in meal preferences, a lack of awareness, and excessive portion sizes. According to the Food and Agriculture Organization, approximately one-third of all food produced globally is wasted, with institutional settings like universities being key contributors. Food waste occurs at multiple stages—during preparation, consumption, and service in college cafeterias. Food waste disposal also strains natural resources and contributes to greenhouse gas emissions through landfills, in addition to raising ethical questions about throwing away food that can be eaten while millions of people suffer from hunger. Addressing food waste in college dining systems requires a multi-faceted approach involving behavior change, improved food service management, technology integration, and awareness campaigns.

CHAPTER 2- REVIEW OF LITERATURE

1. Whitehair, K. J., C. Shanklin W., and L. Brannon A. (2013)

Title: Written Messages Improve Edible Food Waste Behaviors in a University Dining Facility

Summary:

This study explored the impact of behavioral nudges (e.g., signage with written messages) on food waste in a college dining hall. Post-consumer food waste was found to be significantly reduced by strategically placed signs reminding students to only take what they could eat. The intervention was low-cost but had a meaningful influence on student behavior, highlighting the effectiveness of simple awareness techniques.

2. K. Thiagarajah & Getty, V. M. (2013)

Title: The Effect of Moving from a Tray to a Trayless Delivery System in a University Dining Hall on Plate Waste and How Employees Reacted to the Change

Summary:

This research evaluated the effect of removing trays in college dining halls. Students tended to eat less at a time, which resulted in a significant reduction in plate waste when trays were removed. Additionally, the study gathered feedback from dining staff, which revealed minimal opposition to the change and operational benefits.

3. F. Marra, et al. (2018)

Title: The Use of Nudging and Other Behavioral Interventions to Reduce Food Waste in Self-Service Environments

Summary:

This paper reviewed multiple behavioral interventions, including nudging, pre-portioning, and menu design, in self-service environments like cafeterias. It came to the conclusion that by influencing consumer decisions at the point of selection, interventions tailored to specific dining settings, such as restricting choices or providing smaller plates, could reduce waste.

4. Kim, K., & Morawski, S. (2012)

Title: Quantifying the Effects of Going Trayless in a Dining Hall at a University.

Summary:

Using pre- and post-intervention data collection, this study quantified the effect of a trayless policy in a large U.S. university. It found that each student's volume of food waste decreased by 25-30%. Changes in administrative policy that do not necessitate technological investment were supported by the study.

5. Kallbekken, S., & Sælen, H. (2013)

Title: An environmental win-win by "nudging" hotel guests to reduce food waste Despite the fact that it was carried out in a hotel buffet setting, the results are highly applicable to college cafeterias.

Summary:

This research demonstrated that placing signs encouraging guests to reduce waste and take smaller portions led to significant decreases in food waste. Although the buffet-style setting is not unique to

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universities, it makes the findings applicable to college dining halls and makes them applicable.

6. *Food Waste Audit in Selected Hostels of Rajasthan University, Jaipur*

Authors: Sunita Agarwal, Kamlesh Haritwal, Jyoti Meena

- Submitted to the Asian Journal of Food Research and Nutrition in the year 2023
- In summary, the 70-day audit of two girls' hostels revealed significant daily food waste at breakfast, lunch, and dinner in this study. The study emphasizes the significance of raising staff and student awareness of the need to reduce food waste.

7. *Food waste reduction at Chitkara University in Punjab*

- The organization is Chitkara University.
- In conclusion, Chitkara University was able to reduce food waste by 40% by implementing strategies like color-coded bins for tracking waste, adjusting food preparation based on student attendance, offering smaller portion sizes, implementing educational programs, and training staff members who serve food.

8. *Management of food waste at Lovely Professional University (LPU) in Punjab*

- *Institution:* Lovely Professional University
- *Summary:* LPU has implemented a structured system for tracking and managing food waste, including encouraging students to pre-subscribe to meal services, using 200-liter bins for collecting leftovers, and daily tracking of food waste. In the 2022-23 academic year, LPU recorded food wastage of less than 1 metric ton, showcasing its commitment to sustainable practices.

9. *Addressing Malnutrition and Reducing Campus Food Waste at Centurion University, Odisha*

- Centurion University is the organization.
- *Summary:* With a campus population of approximately 12,000, Centurion University

produced around 751 kg of food waste per day in 2023. The university implemented awareness campaigns, efficient menu planning based on ICMR guidelines, composting through bio-digesters, and regular monitoring to reduce per capita food waste from 0.21 kg in 2020 to 0.13 kg in 2023.

10. *Study on Food Wastage in BIT-Patna College Campus Hostel Mess*

- *Author:* Mohit Raj
- *Summary:* This study explores the reasons behind food wastage in the boys' hostel mess at BIT-Patna, managed by Sodexo Food Solutions India Pvt. Ltd. The study identifies factors that contribute to food waste and offers effective solutions to the issue through interviews, observations, and a literature review.

CHAPTER 3-RESEARCH DESIGN

Research Methodology and Data Collection:

This study followed a Design Thinking approach, a user-centered problem-solving framework that emphasizes empathy, ideation, prototyping, and testing. This objective is to reduce food waste in college cafeterias.

Stage 1: Empathy:

To understand the food waste in college cafeterias, a structured Google Forms questionnaire was distributed among students. The survey included both open-ended and multiple-choice questions covering:

- Explore behaviours like skipping meals, disposing of leftovers, over-ordering.
- Include quotes or anecdotes that reflect common attitudes (e.g., "I take more food just in case, but I can't finish it").
- Investigate pain points such as rigid portion sizes, unappealing menu options, or lack of time.

How often do you eat in the college cafeteria?
90 responses

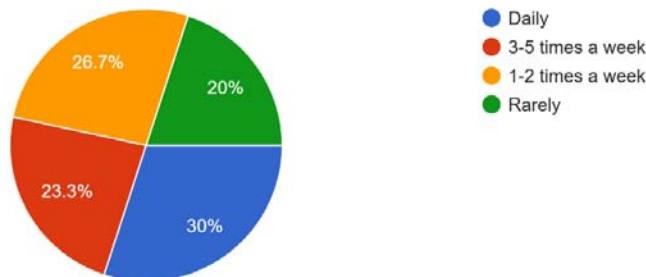


Figure 1

From this pie chart illustrates how often students eat in the college cafeteria, based on 90 responses. According to the data, 30% of students eat in the cafeteria on a daily basis, and 23.3 percent go there 3–5 times per week. This suggests that the cafeteria is frequented by more than half of respondents (53.3%). However, only 26.7% of students eat there more than once per week, and 20% of students rarely make use of the cafeteria's services. Based on this distribution, it would appear that the students the cafeteria serves are a mix of regular and occasional diners. Meal planning and demand forecasting become more difficult as a result of this variation in usage, which can lead to food overproduction and waste if not carefully managed.

Stage 2: Define:

The college cafeteria faces high food waste due to inflexible portion sizes, rushed meal selection, and inconsistent food quality. Students often discard food because of taste issues, large servings, and time constraints. How might we improve meal selection, portion customization, and food quality to minimize waste and enhance student satisfaction?

Stage 3: Idea Pitching:

The team conducted brainstorming sessions to generate possible solutions. The most promising ideas were grouped into four categories:

- Discounts for Smaller Portions
- Food Donation Program
- Customizable portion sizes
- Food Waste Awareness Campaign

Final Recommendation idea: *Customizable portion sizes*

Pros:

- Reduces over-serving.
- Meets individual preferences and increases student satisfaction.
- Reduces post-meal waste.

Cons:

- May slow down service lines.
- Requires operational changes.
- Potential inventory management challenges.

Stage 4: Prototype

A low fidelity prototype of the chosen idea was developed using a visual website.

1. This website helps the students to customize their food portions and combos.
2. Students can pre order their meals where can reduce the time in cafeterias.

3. Helps kitchen plan and reduce overproduction.

Sample website Screen shots:

Below are sample UI screenshots of the food ordering website prototype:

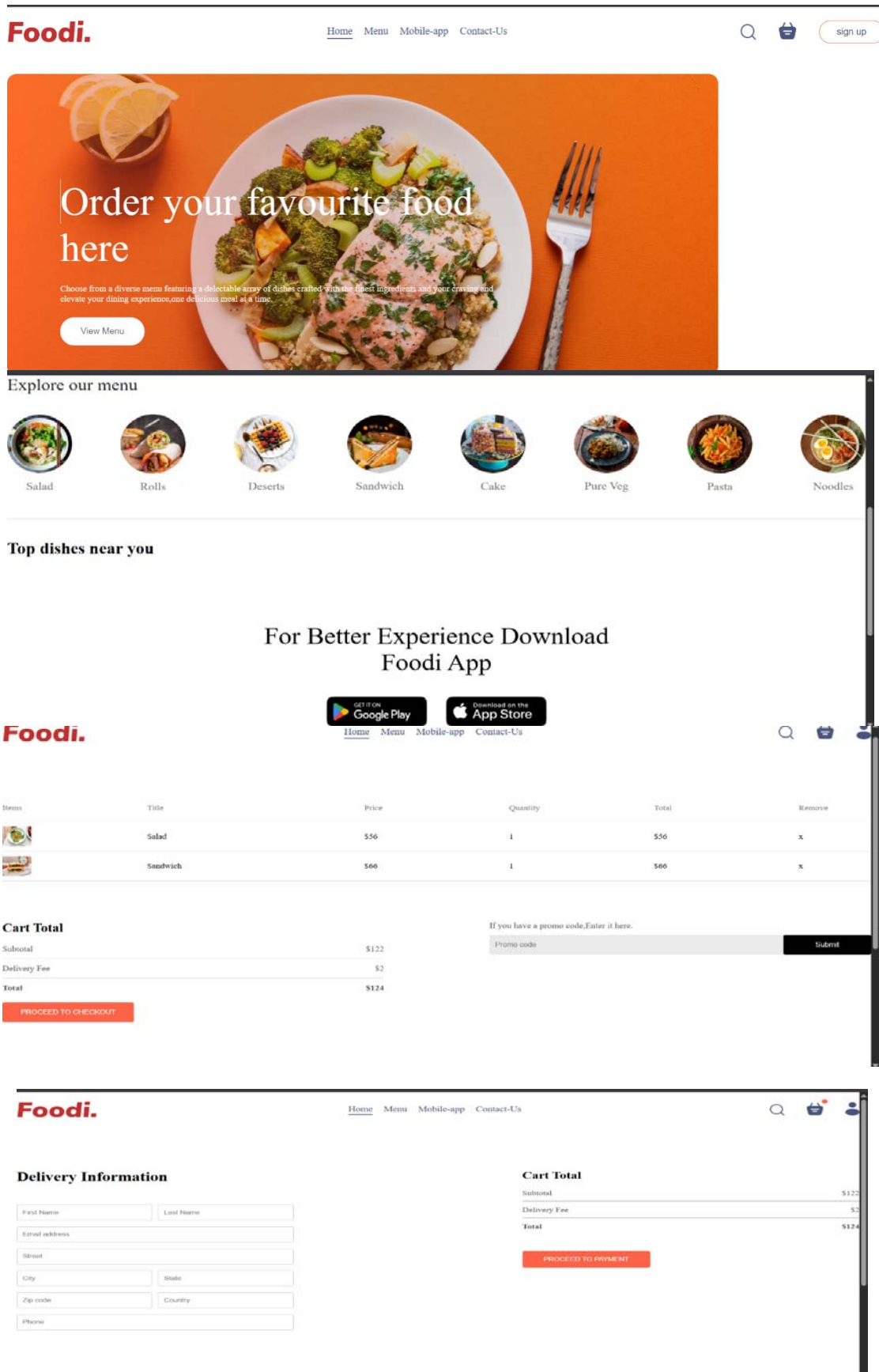


Figure 2

Stage 5: Testing

Conducted usability testing with 20 users over 1 week. Feedback gathered on:

- Ease of use
- Ease to access
- We can pre-order

In the Test phase, users interacted with the prototype of the food ordering website designed to reduce the food waste. Feedback was collected through surveys.

Do you feel rushed to choose your meal, leading to bad choices?

90 responses

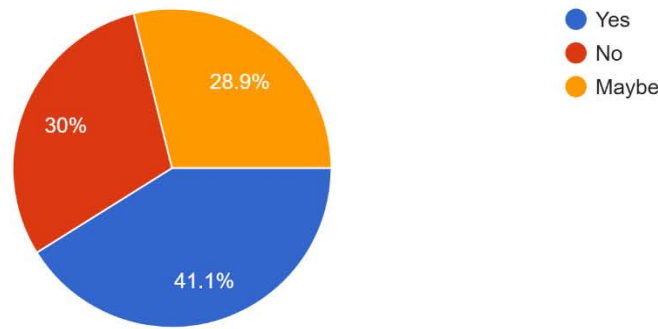


Figure 3

Interpretation:

The second pie chart addresses whether students feel rushed when selecting their meals, potentially leading to poor choices. Out of 90 respondents, 41.1% reported feeling rushed, 30% said they did not, and 28.9% were unsure. This means that nearly 70% of students experience at least some level of uncertainty or pressure when deciding what to eat. This behavior can result in students selecting meals they may not truly want or enjoy, which increases the likelihood of uneaten food being discarded. Such a pattern highlights a critical issue: the lack of time or clarity during meal selection contributes directly to food waste, emphasizing the need for improved systems that support more thoughtful and informed meal choices.

CHAPTER 4- SUMMARY OF FINDINGS, SUGGESTIONS AND CONCLUSION

Findings:

1.
 - A significant portion of students (53.3%) eat in the cafeteria frequently (daily or 3–5 times a week).
 - Nearly 47% of respondents use the cafeteria only occasionally or infrequently.
 - The cafeteria must accommodate both frequent and occasional visitors because of this variation in usage, making demand forecasting and portion planning more difficult.

2.
 - A combined 70% (Yes + Maybe) of students feel some level of pressure or indecision while selecting meals.
 - Impatient decisions may result in:
 - Unwanted food selections
 - More food goes to waste (if students throw away food they didn't really want) o A lower level of contentment with cafeteria meals

Suggestions:

1. *Introduce Digital Pre-ordering:*
 - Make it possible for students to choose their meals in advance through an app or website.
 - This can reduce last-minute decisions and help the kitchen prepare accurate quantities.
2. *Implement Customizable Portion Sizes:*
 - Enable students to choose smaller, medium, or large portions based on hunger levels.
 - This can directly reduce uneaten food waste.
3. *Display Menus with Nutritional Info & Photos:*
 - Waste and poor meal choices can be reduced by making informed decisions easier.
4. *Train Staff on Predictive Serving:*
 - To avoid over-preparation, adjust cooking quantities based on meal timing and popularity trends.
5. *System for Student Feedback:*
 - To learn about shifting preferences and levels of satisfaction, conduct feedback kiosks or surveys on a regular basis.

CONCLUSION

The analysis reveals that while over half the student body regularly uses the college cafeteria, a large portion also experiences rushed meal decisions. This frequently leads to poor food choices, which may increase food waste. Implementing digital pre-selection tools, portion customization, and better meal presentation strategies can significantly enhance meal satisfaction and reduce food wastage. Addressing these concerns not only improves operational efficiency but also supports a sustainable campus dining environment.

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Entrepreneurial Skills and Local Resources: Levers of Territorial Performance in Sfax

By Sarhan Abdennadher & Sami Boudabbous

University of Sfax

Abstract- This work explores the role of entrepreneurial skills and local resource mobilization in the territorial performance of Sfax, highlighting the dynamics of local production systems (LPS). Interviews with 20 entrepreneurs reveal that these systems strengthen competitiveness and resilience through human, organizational and territorial factors. Flexible specialization, although hampered by low equipment flexibility, is a major asset due to the adaptability of human skills.

Social capital, embodied by networks of solidarity and trust, stimulates partnerships and strengthens territorial cohesion. In addition, human resource management stands out as a strategic lever, thanks to structured policies promoting versatility, learning and innovation. However, challenges persist, including talent drain and the inadequacy of training with local needs.

Keywords: *entrepreneurial skills, local resources, local production systems, territorial performance, sfax.*

GJMBR-A Classification: *JEL Code: R11*



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Entrepreneurial Skills and Local Resources: Levers of Territorial Performance in Sfax

Sarhan Abdennadher ^α & Sami Boudabbous ^σ

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Social capital, embodied by networks of solidarity and trust, stimulates partnerships and strengthens territorial cohesion. In addition, human resource management stands out as a strategic lever, thanks to structured policies promoting versatility, learning and innovation. However, challenges persist, including talent drain and the inadequacy of training with local needs.

Sfax stands out for its potential to become an innovation hub, but this requires better synergy between companies, training institutions and public actors. Indeed, the development of Sfax is based on an integrated approach combining skills management, organizational innovation and participatory governance of LPS. This model offers avenues for sustainable growth, while opening up perspectives for future research on social capital and regional comparisons.

Keywords: *entrepreneurial skills, local resources, local production systems, territorial performance, sfax.*

I. INTRODUCTION

Pioneering work in strategy, seeking to understand the determining factors of business performance, initially focused on the structural characteristics of the industry (Ali et al., 2017). The structure-conduct-performance paradigm, originating from industrial economics, considered external elements, such as competition, market size or barriers to entry, as primary determinants of competitiveness and financial results (Bourai et al., 2024). However, this theoretical framework quickly showed its limits in the face of empirical observations demonstrating that companies operating in similar environments displayed radically different performances (Brooks & Oikonomou, 2018).

Indeed, the work of Barney (2007) laid the foundations of the Resource-Based View (RBV) approach, which marked a major turning point in strategic management (Bertram & Bertram, 2016). This perspective places firms' internal resources at the center of the analysis. According to this theory, organizations

capable of effectively identifying, acquiring, and mobilizing strategic resources- that is, unique, rare, difficult-to-imitate, and optimally organized resources- can generate a sustainable competitive advantage (Barney, 2007). The RBV has been the subject of numerous enrichments, including the integration of dynamic capabilities, allowing firms to adapt and innovate in constantly changing environments (Helfat & Martin, 2015). In parallel, the RBV has been expanded to analyze territories, considered as ecosystems with specific resources (Gueler & Schneider, 2021; Lopes et al., 2021). This work is based on the idea that, just like firms, territories can mobilize strategic resources to improve their competitiveness. The concepts of "territorial capital" and "territorial skills" have thus emerged, highlighting the importance of interactions between local actors, infrastructures and institutions in territorial performance (Camagni & Capello, 2013; Crescenzi & Rodríguez-Pose, 2011).

In this perspective, the role of the entrepreneur is central since he acts as a catalyst, capable of identifying and transforming available resources into concrete development opportunities (Leong, 2024; Khan, 2023). His skills, such as innovation, leadership and the ability to build networks, are major levers in the process of creating territorial value (Ferdj, 2024; Secundo et al., 2015). Studies have also shown that entrepreneurs are essential for stimulating cooperation in LPS, by facilitating the emergence of industrial clusters and collaborative ecosystems (Hasan et al., 2024).

In the case of the territory of Sfax, these dynamics are of particular importance. Sfax is one of the main economic hubs of Tunisia, with a rich diversity of natural, human and institutional resources. However, the economic performance of this territory cannot be reduced to its intrinsic characteristics. It largely depends on the ability of local entrepreneurs to mobilize these resources and innovate in a globalized and competitive environment (Gafsi, 2024).

It is in this context that this contribution is made, which seeks to explore the role of entrepreneurial skills as well as the mobilization of local resources in the territorial performance of Sfax.

This article answers these questions in several stages. First, we analyze, from a theoretical point of view, entrepreneurial skills and their role in local systems. Then, we explore the fundamental principles of

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the RBV and its applications at the level of companies and territories. This analysis is completed by a presentation of the main theories relating to organizational and territorial performance. Finally, we present the results of a survey conducted in the Sfax region, aimed at identifying the interactions between the role of entrepreneurial skills, local resources, LPS and territorial performance.

II. LITERATURE REVIEW

a) *Entrepreneurial skills*

The term “entrepreneur” remains a complex concept and difficult to define universally. Although many attempts have been made to grasp its exact meaning, it remains a subject of debate among researchers and practitioners. This ambiguity is reflected in the diversity of definitions of the term, which can vary depending on the times and contexts. Indeed, the entrepreneur is often perceived as a key player in the economy, acting as a driver of innovation and economic growth, but his profile remains difficult to precisely define. This difficulty lies largely in the multiplicity of characteristics associated with the entrepreneur, which are influenced by social, economic and technological developments. According to Ireland et al. (2003), the entrepreneur is a person capable of seizing market opportunities and mobilizing the resources necessary to exploit them. However, this capacity varies considerably depending on the specific skills he develops during his career. Entrepreneurial skills have been at the center of entrepreneurship studies, especially since the beginning of the 21st century (Kuratko, 2005). One of the first attempts to describe these skills was the work of Chandler and Jansen (1992), who proposed a classification into three categories: entrepreneurial skills, managerial skills, and technical-functional skills (Pepple & Enuoh, 2020). These skills are considered essential elements for success in the field of entrepreneurship (Pennetta et al., 2024). Entrepreneurial skills, which include the ability to identify and seize opportunities, are central to the entrepreneurial process. These refer to the ability to identify market niches, develop strategies to enter them, and transform an idea into a viable project. Managerial skills, which concern human resource management, coordination of activities, and team leadership, are also crucial. Technical-functional skills include mastery of management tools and techniques, particularly in the financial, commercial and human resources management fields, which have become essential levers in an increasingly competitive environment (Helfat and Martin, 2015). Contemporary research on entrepreneurial skills has helped redefine and broaden this concept to include behavioral and psychological skills. These behavioral skills are linked to traits such as resilience, the ability to make decisions under uncertainty, and stress management

(Johannisson, 2017). Psychological skills include elements such as self-confidence, the ability to tolerate ambiguity, and the ability to learn from mistakes (Iakovleva et al., 2011). These skills are particularly crucial in a constantly changing entrepreneurial environment. Indeed, entrepreneurs are often faced with uncertain situations, in which they must be able to make quick decisions while strategically minimizing risks (Abdennadher & Boudabbous, 2023). According to Shan et al. (2016), this decision-making agility is a key element of entrepreneurial success.

In more recent work, notably that of Gueler and Schneider (2021), the importance of integrating entrepreneurial skills into the local ecosystem has been highlighted. These authors assert that the entrepreneur cannot succeed alone; he must mobilize not only his personal skills, but also those of a network of local actors who interact to stimulate competitiveness. In addition, according to the research of Lopes et al. (2021), entrepreneurs have a particular responsibility in creating value for their community by taking advantage of locally available resources, whether human talent, financing or infrastructure. The entrepreneur thus becomes a catalyst for innovation, not only through his own activity, but also through his interactions with other economic actors in the territory (Johannisson, 2017). This local dimension of entrepreneurship is particularly important for understanding how entrepreneurial skills translate into territorial impacts. Entrepreneurial skills are also influenced by an entrepreneur’s ability to evolve in a constantly changing environment. According to Secundo et al. (2015), successful entrepreneurs are those who have a long-term vision and are able to reinvent themselves in the face of economic challenges. This includes managing uncertainty, the ability to take calculated risks and invest in long-term projects. In this context, skills related to knowledge management, adaptability and innovation become essential elements for success (Johannisson, 2017). These skills are all the more crucial in a context where technological innovations are rapidly changing the conditions of competition, particularly through the digitalization of economic processes. Thus, the entrepreneur must constantly learn and adapt to remain competitive in an increasingly interconnected and globalized world. Helfat and Martin (2015) explain that companies that manage to maintain dynamic capabilities – the ability to adapt to new market conditions – are better placed to cope with economic turbulence.

From this perspective, mastery of technical skills, while essential, is no longer sufficient. The entrepreneur must be able to navigate complex networks of partners and local actors to capture strategic resources and information. This interaction between the entrepreneur and their local environment creates what is called an “entrepreneurial ecosystem”, which promotes innovation and competitiveness (Gueler and Schneider,

2021). By mobilizing the territory's resources, the entrepreneur creates synergies with other companies, institutions or researchers, thereby strengthening the territory's collective performance. These networks also make it possible to accelerate access to new technologies, new knowledge and new markets. According to Lopes et al. (2021), such an ecosystem is essential for the development of a dynamic and innovative local economy.

The impact of entrepreneurial skills on the performance of a territory is all the more important as it can influence the economic structure of an entire region. As Gueler and Schneider (2021) indicate, the entrepreneur becomes a strategic player in the transformation of the territory, by contributing to the diversification of economic activities and job creation. Indeed, entrepreneurial skills influence not only the competitiveness of companies, but also the capacity of territories to attract investments and develop infrastructure adapted to the needs of the entrepreneur. Regions where entrepreneurial skills are strong and well-developed are therefore better prepared to face economic crises and the challenges of a globalized market. That said, there are significant challenges to overcome for entrepreneurial skills to be fully exploited. One of the main obstacles to the acquisition of these skills is the lack of appropriate education and training. Although formal education in entrepreneurship has progressed, it is not enough on its own to prepare entrepreneurs to face market realities. The acquisition of entrepreneurial skills also requires practical experiences, access to networks of entrepreneurs and the ability to make decisions in contexts of uncertainty. Environments conducive to entrepreneurship, such as business incubators and coworking spaces, also play a crucial role in this process of continuous training. Moreover, according to Olanrewaju et al. (2020), access to these external resources is a key factor in the development of entrepreneurial skills. Collaboration and mutual learning between entrepreneurs can accelerate the process of creating a viable and sustainable business. In this dynamic, research has also highlighted the importance of skills related to risk management and resilience. According to Hedner et al. (2011), entrepreneurial resilience is one of the most crucial skills to overcome obstacles related to uncertainty and failure. A resilient entrepreneur is able to bounce back from failures, learn from mistakes, and adapt to new market realities (Abdennadher, 2021a). Resilience is particularly important in rapidly changing sectors, where risks are high and margins for error are low.

Finally, entrepreneurial skills are not limited to managing a business. They also have a significant impact on the entrepreneur's ability to positively influence their environment and contribute to the sustainable development of their territory. Entrepreneurs, by mobilizing their skills to meet local needs,

play a key role in social and economic inclusion, particularly in underdeveloped regions or those in economic transition. According to Hasan et al. (2024), these dynamics are particularly visible in small and medium-sized enterprises, which, thanks to their specific skills, can transform marginalized regions into poles of economic development.

b) *The Resource-based Approach*

The resource-based view (RBV), although initially developed to analyze the competitive advantages of companies, has found interesting applications in the context of territories. Introduced by Wernerfelt (1984) and developed by Barney (2007), this approach postulates that performance depends mainly on internal resources that are rare, non-substitutable, and difficult to imitate. In a global environment marked by growing inequalities between territories, this perspective is particularly useful for understanding how certain geographical areas manage to stand out.

According to Barney (2007), a strategic resource is defined by its value, rarity, inimitable, and non-substitutable (VRIN). Applied to territories, this concept encompasses a variety of elements, ranging from natural resources to infrastructure, including human, cultural, and institutional assets. For example, the architectural heritage of cities such as Florence or Kyoto constitutes a unique and valuable resource that is difficult to replicate elsewhere.

However, not all resources automatically translate into competitive advantages. Inefficient management can reduce their potential. The case of hydrocarbon-dependent economies, such as some regions of the Middle East, illustrates the "paradox of abundance": despite their natural wealth, inadequate strategic choices often limit their economic diversification (Auty, 2002).

The work of Rodríguez-Pose (2018) shows that to transform resources into competitive assets, it is essential to invest in suitable infrastructure, inclusive policies and effective governance. For example, European regions with EU structural funds have been more successful in mobilising their latent resources for local development than comparable regions without strong institutional support.

Collective skills, defined as the capacity of a group of actors to mobilise, coordinate and transform resources effectively, are essential for territorial success. These skills are based on dynamic interactions between companies, universities, public authorities and citizens. They encompass various dimensions, including collaborative innovation, strategic planning and conflict resolution.

For example, industrial clusters in Northern Europe have demonstrated their ability to reinvent themselves by combining collective learning and smart specialisation. The Norwegian maritime industry is an

emblematic case: thanks to close cooperation between companies, academic institutions and local governments, this sector has not only withstood market fluctuations, but has also positioned itself as a global leader in green maritime technologies (Isaksen and Trippl, 2016).

Beyond the economic sphere, collective skills also play a key role in managing social and environmental challenges. Through participatory governance processes, territories can mobilise their inhabitants to co-create innovative solutions. Healey's (2006) work on participatory urban planning shows that inclusive approaches can build a shared strategic vision, thus strengthening social cohesion and local resilience.

In a context marked by environmental and social crises, the RBV approach can be broadened to include a sustainability perspective. Territories can exploit their renewable resources while minimizing negative externalities. Cities such as Stockholm or Vancouver illustrate this strategy by adopting ambitious carbon emission reduction policies, while valuing their natural and technological assets (Bulkeley et al., 2014).

However, achieving this balance requires effective governance and strong institutional skills. Ostrom's (2010) research on the collective management of common resources shows that well-designed institutional frameworks can promote sustainable use while ensuring a fair distribution of benefits.

In this context, innovation plays a crucial role. For example, territories can adopt circular economic models to maximize the use of local resources. The region of Flanders, Belgium, is a pioneering example in this field, with initiatives integrating recycling, renewable energy and eco-design (Levosio et al., 2020).

Although promising, applying the RBV approach to territories is not without challenges. First, identifying strategic resources requires a detailed understanding of local dynamics. This can be hampered by a lack of data or limited coordination between key actors. Camagni and Capello (2013) highlight that in many cases, intangible resources, such as social or cultural capital, are underestimated due to a lack of suitable methodologies.

Second, conflicts of interest between local actors can limit resource mobilization. For example, in regions dominated by extractive industries, tensions between local communities, businesses, and public authorities can hamper economic diversification initiatives.

Finally, territorial sustainability requires trade-offs between resource exploitation and preservation. Territories facing major environmental challenges must invest in innovative technologies and policies to ensure balanced development. Research on vulnerable coastal areas, such as those in the Lesser Antilles, shows that

insufficient investments in climate resilience exacerbate risks for local populations (Nurse et al., 2014).

Despite these challenges, the RBV approach offers strategic opportunities for policymakers. First, it encourages differentiation based on local specificities. For example, regions with a rich cultural heritage can position themselves as unique tourist destinations. Scotland has successfully used this strategy by promoting its traditions while investing in modern infrastructure (Smith and Richards, 2013).

Second, the rise of digital technologies facilitates the identification and valorization of territorial resources. Geographic information systems and big data tools enable more precise planning and evidence-based decisions (Batty, 2018).

Finally, the RBV approach promotes long-term thinking, encouraging territories to invest in sustainable skills and collaborative networks. The Nordic regional development strategy, focusing on education, innovation and sustainability, is an inspiring example for other regions (Lundvall, 2016).

The resource- and skills-based approach represents a powerful perspective for understanding and strengthening the competitiveness of territories. By focusing on specific resources and collective skills, this approach helps to reveal the latent potential of territories while promoting sustainable and inclusive management. However, its application requires concerted efforts, effective governance and a long-term strategic vision. By mobilizing these principles, territories can not only address contemporary challenges, but also build a more equitable and resilient future.

c) *Performance*

The notion of performance occupies a central place in management sciences, but it remains complex due to its multidimensional nature (Bocco, 2010). Since the 1980s, numerous studies (Bouquin, 1986; Bescos et al., 1993; Bourguignon, 1995; Lebas, 1995; Bessire, 1999) have attempted to better define and measure it, giving rise to a variety of approaches and perspectives (Issor, 2017).

Bourguignon (1995) emphasizes that performance is a polysemic concept Ghaz & Oubrahimi, (2024). According to him, it can be understood in two ways: the achievement of organizational objectives, regardless of the nature and variety of these objectives. This achievement can be understood in the strict sense (result, outcome) or in the broad sense of the process that leads to the result (action) (Ghaz & Oubrahimi, 2024).

This definition highlights both the measurable purpose and the strategic process that leads to the results. This perspective is now expanding to integrate social and environmental dimensions, in line with stakeholder expectations and sustainability issues (Gningue et al., 2023).

Performance can be assessed through several fundamental dimensions. According to Issor (2017), four principles structure this assessment:

- Effectiveness, measured by the ability to achieve the set objectives. It relates the results obtained to the previously defined objectives, constituting a key indicator in a competitive environment.
- Efficiency, which focuses on the optimization of the means mobilized to obtain the results. It expresses performance in relation to the use of resources.
- Coherence, reflecting the alignment of the internal elements of the organization to ensure optimal synergy. A coherent organization is better equipped to face internal and external transformations.
- Relevance, which links objectives and means to environmental constraints. This dimension is essential for assessing strategic performance, particularly in complex environments.

Paturel and Maalel (2016) propose a complementary framework for measuring performance based on three key dimensions.

- Effectiveness represents the achievement of organizational objectives as they were set. It focuses on the results obtained in relation to expectations.
- Efficiency, for its part, highlights the relationship between the resources mobilized and the results obtained, which reinforces the importance of minimizing costs or waste while maximizing production.
- Effectiveness assesses the extent to which the actions undertaken produce the expected effects. This dimension goes beyond the simple relationship between means and results, by focusing on the impact and relevance of the actions implemented.

This triptych enriches the understanding of organizations by allowing their performance to be evaluated on both quantitative and qualitative bases, while taking into account their specific contexts.

For their part, Morin (1994) identifies four major theoretical approaches explaining organizational performance (Erragragui & Aoufir, 2023).

- The economic approach, focused on financial results and indicators such as profitability or revenue growth.
- The social approach, which emphasizes employee well-being, stakeholder satisfaction and societal impact.
- The systemic approach, which considers the organization as a complex system where performance results from harmonious interactions between the different components.
- The political approach, which explores power dynamics, negotiations and influence strategies within the organization.

In addition, a fifth approach is emerging in recent academic debates, integrating social and environmental dimensions, in accordance with the triple bottom line concept (Cherkaoui & El Aabar, 2022).

Bocco (2010) further broadens the understanding of performance with a multidimensional vision that encompasses three main dimensions.

- The strategic dimension, relating to the ability to achieve long-term objectives and create sustainable value.
 - The socio-economic dimension, integrating the impacts of organizational activities on employees, customers and society.
 - The competitive dimension, which assesses the organization's ability to maintain a sustainable competitive advantage.
- Hall (1980), for his part, distinguishes two fundamental models of performance:
- The goal-based model (goal achievement model), which emphasizes the achievement of set objectives.
 - The resource acquisition model, which assesses an organization's ability to acquire and mobilize its resources effectively.

These traditional models remain relevant but have been enriched by recent frameworks integrating digitalization, innovation and sustainability as strategic levers (Teece, 2018).

Indeed, organizational performance is a complex and evolving concept. Classical approaches, enriched by contemporary contributions such as those of Paturel and Maalel (2016), show that performance evaluation is no longer limited to financial measures alone. It encompasses strategic, social, environmental and political dimensions that reflect stakeholder expectations and the challenges of dynamic environments.

III. RESEARCH METHODOLOGY

The study presented in this article seeks to explore the role of entrepreneurial skills and the mobilization of local resources in the territorial performance of Sfax. Indeed, in this contribution, we attempt to answer the question: how can entrepreneurial skills and the mobilization of local resources improve the territorial performance of Sfax?

To address this issue, we have opted for an exploratory approach within the framework of qualitative research. According to Bryman (2016), qualitative research can answer complex questions, particularly when it comes to explaining the "how" of phenomena. This type of methodology is particularly suited to studies on entrepreneurship, as it offers the flexibility needed to understand specific and contextual dynamics (Creswell & Poth, 2016).

The methodology chosen is based on a case study through interviews. This method is particularly relevant when answering questions exploring complex processes or mechanisms (Yin, 2009). In our research, each "case" corresponds to an entrepreneur carrying out a project, and our unit of analysis is therefore the individual. Given the exploratory orientation of this study, we adopted a multi-site approach, integrating several cases in order to diversify perspectives and ensure better contextual representativeness. Our sample consists of 20 entrepreneurs from the Sfax region. This number, although apparently small, is in line with the logic of qualitative studies where sampling is guided more by the relevance of the cases than by statistical representativeness (Patton, 2014). As for the selection of participants, this is a purposive sampling. Huberman (2014) emphasizes that this type of sampling is based on a deliberate choice of cases for their ability to enrich theoretical reflection, rather than on a random selection aimed at statistical generalization.

The data were collected using semi-directed centered interviews. This technique, as explained by Qu & Dumay (2011), allows respondents to be guided in the discussion while minimizing the researcher's biases. Semi-directed interviews thus offer an opportunity to obtain rich, detailed data that is directly relevant to the research objectives. In this context, the interview guide was designed to explore the participants' entrepreneurial skills, the resources mobilized in their activities, and the perceived impacts on territorial development.

The approach adopted guarantees in-depth and contextualized data collection, which is essential for identifying elements likely to contribute to a better understanding of the mechanisms linking entrepreneurship and territorial performance. The average duration of each interview is 50 minutes. The interview guide was structured around the following questions.

- What do you think are the key skills that an entrepreneur must have to succeed in the Sfax region?
- How do these skills contribute to your daily activity?
- What challenges have you encountered in developing your entrepreneurial skills, and how did you overcome them?
- Are there local mechanisms or networks that have helped you develop these skills?
- What local resources (material, human, financial, or institutional) have you mobilized to launch or develop your business?
- What are the main advantages or limitations of these resources in the Sfax region?
- How do you assess the role of local networks or partnerships (with other entrepreneurs, public or private institutions) in the success of your project?

- How do your entrepreneurial initiatives contribute to the economic and social development of the Sfax region?
- What changes or improvements would you like to see in the local environment to better support entrepreneurs and strengthen territorial performance?

The data collected were analyzed using a content analysis method. They were first recorded, then transcribed in full to ensure fidelity to the participants' statements. These transcriptions were then organized in verbatim form. Subsequently, these verbatim were subjected to a thematic coding process, structured around the dimensions of our research question, as recommended by Cooper et al. (2012) in their approach to qualitative thematic analysis.

IV. RESULTS AND ANALYSIS

a) *The Performance of LPS*

Through the interviews conducted, 15 of the entrepreneurs interviewed acknowledge their membership in LPS in Sfax, and even beyond, in other regions. This membership, according to them, represents a major asset in overcoming the difficulties they face. Several of them say that they could not carry out certain projects without the support of their local network. As one of the entrepreneurs points out: "It is thanks to our local network that we can accelerate the implementation of projects. Solidarity and exchange between actors are essential to succeed in our sector." This idea is consistent with the observation of Delaplace (2011), according to which LPS play a central role in strengthening the competitiveness of local companies by promoting the exchange of resources and inter-company collaboration. Indeed, these entrepreneurs confirm that their membership in these systems allows them to be more efficient and responsive in project management, while reducing the risk of failure when working alone.

For these entrepreneurs, integration into a LPS seems to facilitate the circulation of ideas, knowledge and know-how. Networking also makes it possible to identify common objectives and face shared challenges, a phenomenon that Malecki (2011) describes as "social capital" that promotes better coordination within LPS. These entrepreneurs explain that the relationships of trust built over time strengthen the sustainability of the partnership. In this regard, one entrepreneur states: "It is trust that allows us to continue working together, even in difficult times. It is not just a question of money, but of credibility and shared values." This idea is supported by the literature, where several studies, including that of Kandade et al. (2021), recall the importance of interpersonal relationships and trust in maintaining strong business partnerships, particularly in LPS.

The interview results reveal that the performance of an LPS is measured according to two essential dimensions: the flexible specialization and the adaptability-innovation capacity of the LPS, as well as the governance of these systems. These two dimensions are essential to understand the effectiveness of LPS in the context of Sfax, a region marked by the diversity of sectors and industrial activities.

Flexible specialization is a key element in the organization of these systems. It allows entrepreneurs to be responsive to market fluctuations and to adopt innovative practices. Indeed, most companies in Sfax, as one of the entrepreneurs explains, have had to "constantly adapt to new customer demands", which has allowed them to remain competitive. However, the interview results reveal heterogeneity in the sectors of activity of the companies, with varied industrial and service profiles. Three companies do not practice production, limiting themselves only to the trade of goods. Two other companies are in the mass distribution sector, with a marginal share of production, while 4 companies specialize in services and 11 others have an industrial profile.

The diversity of the modes of organization of production activities in these companies is striking. Indeed, the majority of companies use organized production lines (7 companies) or a dual mode of organization, both by workshop and by production line (4 companies). However, equipment flexibility seems less common, as shown in the study by Courlet and Ferguene (2010). According to them, equipment flexibility and flexible specialization within LPS are fundamental characteristics of their performance. On the other hand, our study reveals that the majority of companies in Sfax do not have this flexibility, because they rely on specialized rather than versatile equipment. The productive organization of companies within LPS is mainly based on the equipment and skills available. The entrepreneurs interviewed mostly have industrial profiles, but there are notable differences in the use of equipment. While some companies favor specialized equipment by workshop or production line, others opt for versatile equipment, allowing greater flexibility. However, this flexibility is not systematic, and in the context of LPS in Sfax, it seems to have a limited impact on the overall performance of the local production system.

In this regard, an entrepreneur testifies: "The flexibility of equipment is an asset, but what matters most is the ability of our teams to adapt and solve problems quickly. Without human skills, technology can do nothing." This is consistent with the work of Reagans and Zuckerman (2013), who emphasize that the flexibility of equipment is important, but that adaptability and human skills are the key factors for the success of companies in an LPS.

Our results show that while material flexibility plays an important role, it is far from sufficient to guarantee the performance of LPS. The human aspect, in particular the entrepreneurial skills and adaptability of local actors, appears to be a crucial lever for improving the territorial performance of Sfax.

Indeed, the analysis of the interviews reveals that entrepreneurial skills and the mobilization of local resources, within the LPS of Sfax, play a central role in territorial performance. The ability of entrepreneurs to overcome challenges through solidarity, the exchange of ideas and know-how, as well as the consolidation of inter-company relations, constitutes a real driver of competitiveness for the region. However, the organization of companies and the flexibility of equipment are not enough on their own to ensure performance: the governance of the LPS, trust between actors and human skills remain determining factors for the success of collective projects.

b) Human Resources Management and Territorial Performance

In the 20 cases studied, the majority of entrepreneurs report having a human resources department, with the exception of two. The vast majority of these entrepreneurs offer their employees permanent contracts, an approach that contributes to team stability and better human resources management. This stability is seen as a major asset by the entrepreneurs interviewed. As one of them stated: "Having permanent employees allows us to build solid relationships and ensure better skills management in the long term." This approach not only promotes employee loyalty, but also continuity in projects, a key factor for the sustainable development of entrepreneurs and regional competitiveness.

Concerning human resources management tools, ten entrepreneurs have set up a skills framework, eight have a job and skills management system, and fifteen practice management by objectives as well as a training plan. However, two entrepreneurs do not use any specific skills management tools, and another does not communicate about its management tools. Nevertheless, for the 20 cases that are part of the LPS, 18 of them use skills management tools, placing these skills at the heart of their development strategy. This result supports the idea put forward by Fortuné (2024), who highlights the importance of skills management tools to promote innovation and the competitiveness of projects. As for the skills profile, 18 entrepreneurs have developed detailed profiles of the skills available within their teams. These entrepreneurs have a varied range of professional skills, often with versatile qualifications, with the exception of 5 who favor specialized skills. In addition, 15 entrepreneurs highlight a high capacity for learning and innovation. This versatility of qualifications is an asset for the adaptability of entrepreneurs in the

face of market changes and the requirements of the local production system. As one entrepreneur explains: "Our employees are able to adapt to different roles, which allows us to face unforeseen challenges effectively." The adaptability of the cases studied is also reflected in flexibility in the way they regulate specialization. This system is characterized by competition based more on product quality than on price. 18 of the entrepreneurs interviewed consider that the quality and diversity of their offerings represent a key competitive advantage, clearly distinguishing them from the competition (Abdennadher, 2021b). One entrepreneur testifies: "In our sector, price competition is a thing of the past. Today, what makes the difference is the ability to offer products that comply with international standards and to anticipate market needs." This phenomenon of flexible specialization is consistent with the work of Lazzarini et al. (2001), who suggest that competition by quality, rather than by price, is an effective differentiation strategy in LPS, allowing entrepreneurs to remain competitive in the face of global competition.

With the exception of two entrepreneurs, the others emphasize the importance of competition based on product quality and diversity of supply. For these entrepreneurs, the opening of the market on an international scale makes competition increasingly demanding, requiring an upgrade of quality standards to surpass foreign competitors. In this sense, the implementation of adapted skills management and a quality differentiation strategy seems to be an essential lever to ensure the sustainability of local entrepreneurs and, by extension, improve the territorial performance of Sfax.

c) *Territorial Development and Skills Development*

In the 20 cases studied, 18 entrepreneurs draw up detailed profiles of the skills available within their structures. These companies display a diversity of professional skills, characterized by versatile qualifications. However, three of them favor more specialized skills. Furthermore, 17 entrepreneurs state that their teams have a strong capacity for learning, and 14 emphasize a high aptitude for innovation. This collective dynamic has allowed 18 companies to develop collective skills, 17 to acquire organizational and dynamic capacities, and 16 to consolidate key skills.

This widespread awareness of the importance of skills is reflected in targeted management and improvement policies. One entrepreneur summarizes: "Skills are not just an asset; they are the backbone of the sustainability of our business." This corroborates the work of Ali and Anwar (2021), who highlight that skills are a strategic resource for the competitiveness of companies.

To maintain and develop their human resources, 15 interviewed entrepreneurs have imple-

mented policies to improve knowledge and learning capabilities. Among them, 5 use training abroad, while 4 invite foreign trainers to improve local skills. In addition, 12 companies have a system for creating new knowledge, 16 engage in skills development, 15 invest in skills building, and 15 implement specific processes to develop key skills.

An entrepreneur testifies: "We have realized that to remain competitive, it is essential to always learn and innovate. That is why we invest in targeted training, although it is expensive." However, a major challenge remains the migration of trained talent: after benefiting from company-funded training, some employees leave to explore better opportunities. This phenomenon imposes on companies a recurring recruitment and training cycle, with significant costs.

The analysis reveals that 18 entrepreneurs consider that the territory of Sfax provides them with specific resources, while 17 recognize the contribution of the territory in the creation of unique skills, including know-how and raw materials. In addition, 18 entrepreneurs emphasize that these skills are based on intrinsic qualities of the territory, such as its historical heritage and its various resources.

However, collaboration with training organizations remains a weak point. Although 13 entrepreneurs maintain partnerships with vocational training centers, they often criticize the standardized nature of the training offered. One entrepreneur explains: "These trainings lack relevance. They do not respond to the real challenges that we face daily." Universities are not exempt from criticism, as they also struggle to provide training adapted to the needs of local companies, a finding that is consistent with the observations of Castillo-Vergara et al. (2021), who highlight the essential role of adapting training in the competitiveness of local businesses.

The Sfax region shows signs of resilience and innovation, although challenges persist. 18 entrepreneurs interviewed noted a growing dynamism, supported by local initiatives and limited public efforts. This dynamism is based on the valorization of local skills and the ability to create specific non-transferable resources.

The Sfax region is thus beginning a virtuous cycle where the development of the territory and that of LPS feed off each other. One entrepreneur emphasizes: "The local production system in which we operate is not limited to a survival strategy; it actively contributes to revitalizing the entire territory." This observation is in line with the theories of Dissart & Seigneuret (2020), who consider that territorial development based on local skills and resources promotes resilience and regional competitiveness.

However, the territory of Sfax shows encouraging signs in terms of partnerships for innovation, despite some limitations. Although the

majority of companies continue to rely mainly on internal initiatives, there is a gradual increase in external collaborations, particularly in the field of vocational training. This development shows that the territory is beginning to evolve towards a model of "innovative environment", as described by the model proposed by Asheim and Gertler (2006). Although there is still some way to go to fully achieve this status, the efforts undertaken demonstrate a growing potential to strengthen innovation through strategic partnerships.

Finally, the territory of Sfax has undeniable potential to become a model of skills-based development. Nevertheless, significant efforts are needed to strengthen collaborations between companies, training organizations, and public institutions. The objective would be to establish a synergy where LPS contribute to territorial performance, while benefiting from the region's unique resources and skills.

V. CONCLUSION

This work explored the role of entrepreneurial skills and the mobilization of local resources in the territorial performance of Sfax, highlighting the dynamics specific to LPS. The analysis reveals that the latter constitute essential levers for the competitiveness and resilience of the territory, thanks to their capacity to integrate human, organizational and territorial factors.

The results of the interviews conducted with 20 entrepreneurs highlight several major findings. First, the flexible specialization, characteristic of LPS, promotes crucial adaptability to market fluctuations, although it is sometimes limited by low flexibility of equipment. This constraint is nevertheless offset by the effective mobilization of human skills, which stand out as a central pillar of performance. Second, the networks of solidarity and trust, inscribed in a logic of social capital, strengthen inter-company partnerships and contribute to territorial cohesion.

In addition, human resources management emerges as a strategic determinant in the performance of LPS. The implementation of structured policies, such as training plans and management by objectives, helps stabilize teams and stimulate their versatility, which is essential for innovation and organizational learning. However, challenges persist, particularly with regard to talent drain and the inadequacy of professional training with the specific needs of the local market.

The territory of Sfax is also distinguished by its unique resources and significant potential to become an innovation hub. However, achieving this objective requires better synergy between businesses, training institutions and public actors. The creation of a true "innovative environment" appears to be a promising way to maximize the value of local resources and strengthen regional competitiveness.

In conclusion, this study highlights that the territorial performance of Sfax is based on an integrated approach combining skills management, organizational innovation and territorial collaboration. To meet the challenges identified and seize emerging opportunities, it is crucial to strengthen organizational flexibility, align training with market needs, and promote participatory governance of LPS. Such an approach will not only consolidate Sfax's resilience, but also place its development in a sustainable and inclusive growth trajectory, making this region a model for other territories with a high entrepreneurial density.

The results of this work open the way to several avenues of future research. A more in-depth exploration of the specific mechanisms by which social capital influences territorial performance could provide additional insights. Similarly, a comparative analysis with other regions, national or international, would make it possible to identify transferable success factors and those that relate to local specificities. Finally, a longitudinal approach integrating quantitative data on the economic performance of LPS would offer a more complete understanding of their evolution and their impact on territorial development.

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Effect of Information Technology on Product Management: A Case Study of Supermarkets in Lagos State, Nigeria

By Felix Abayomi Adebajo

Abstract- Purpose: This paper provides a comprehensive analysis of the effects of information technology on product management. By examining case studies and empirical research, the study will highlight best practices and identify critical success factors for leveraging IT in product management.

Methodology: A two-stage sampling procedure was used to obtain relevant information from the various supermarkets in the area of study. Lagos State is administratively structured into five divisions: Lagos (Eko), Ikeja, Epe, Ikorodu and Badagry. In the first stage, Lagos State was purposively selected. This was done due to the high concentration of supermarkets in these area.

The second stage involved the random selection of 87 supermarkets from the study area. These 87 supermarkets constituted the sample size for this study.

Analysis: Primary data were collected for the purpose of this study using a structured questionnaire to elicit information from managers at various supermarkets in Lagos state.

Keywords: digital transformation, information technology, marketing and products.

GJMBR-A Classification: JEL Code: L81, O33, M15



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Analysis: Primary data were collected for the purpose of this study using a structured questionnaire to elicit information from managers at various supermarkets in Lagos state. Information collected include: socioeconomic characteristics of the firm, their level of awareness and perception of digital transformation and business analysis. Descriptive statistics such as mean, median, standard deviation, percentages and range for investigating the socio-economic characteristics of the supermarkets in the study area while Tobit regression was used to determine the effect of various IT available on the sales of the supermarket in the study area.

Results: It was observed that POS was highly significant with a positive coefficient of 0.9269, this implies that supermarkets who adopt the POS technology are more likely to increase their sales with about 92.69%. This could be due to cashless experienced by Nigerians since 2022, while those that adopt the Inventory management software technology may increase their sales by 28.16%. These findings underscore the necessity for businesses to embrace digital transformation to enhance operational efficiency and competitiveness. Future research should explore other IT tools and their long-term impacts on product management across different industries.

Originality/Value: This paper attempt to show the relationship between businesses and IT effectiveness.

Keywords: digital transformation, information technology, marketing and products.

I. INTRODUCTION

In the rapidly evolving business landscape, the integration of information technology (IT) has become a pivotal factor in the transformation of product

management practices. Information technology encompasses a wide range of tools and systems that facilitate the efficient handling, processing, and dissemination of information, thereby enabling organizations to innovate, streamline operations, and enhance decision-making processes (Laudon & Laudon, 2020). This paper explores the profound impact of IT on product management, examining how digital tools and technologies are reshaping the development, production, and marketing of products.

The advent of advanced IT solutions, such as big data analytics, cloud computing, and artificial intelligence (AI), has revolutionized the way companies manage their product lifecycles. For instance, big data analytics allows product managers to gain deeper insights into customer preferences and market trends, enabling more informed decisions regarding product design and features (Chen, Chiang, & Storey, 2012). Cloud computing offers scalable and flexible IT infrastructure that supports real-time collaboration among cross-functional teams, thus accelerating product development cycles (Marston et al., 2011). Moreover, AI-powered tools enhance predictive analytics and automation, optimizing product management processes from concept to commercialization (Bughin et al., 2018).

In addition to technological advancements, the integration of IT in product management fosters enhanced communication and coordination among stakeholders. Digital platforms and collaborative tools facilitate seamless interaction between product managers, engineers, designers, and marketers, ensuring alignment with organizational goals and customer expectations (Nambisan, 2017). This improved collaboration not only speeds up the time-to-market but also enhances product quality and customer satisfaction.

However, the adoption of IT in product management is not without challenges. Issues such as data security, integration complexity, and the need for continuous upskilling of the workforce present significant hurdles (Bharadwaj et al., 2013). Organizations must navigate these challenges to fully leverage the potential of IT in enhancing product management practices.

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This paper provides a comprehensive analysis of the effects of information technology on product management. By examining case studies and empirical research, the study will highlight best practices and identify critical success factors for leveraging IT in product management. Ultimately, this research will contribute to a deeper understanding of how IT can be strategically utilized to drive innovation and competitive advantage in product management.

II. RESEARCH METHODOLOGY

a) Study Area

This study was carried out in Lagos State located on latitude 6.5244° N, and longitude 3.3792° E in the South-west region of Nigeria. Lagos State is on the Atlantic coast in the Gulf of Guinea, west of River Niger and on a coastal plain of the Bight of Benin. It is bounded by Ogun state to the north and east, by the Bight of Benin to the south, and by the Republic of Benin to the west. Lagos which is one of the thirty-six Nigerian states was created May 27, 1967. It has an estimated population of 12,772,884 people (National Bureau of Statistics, 2019) and a land area of 3,577 square kilometres out of which 786.94 kilometres is covered with creeks and lagoons.

Though fishing is the Traditional and major occupation of the people of Lagos, Lagos State plays a pivotal role in the Nigerian economy and as a nation's commercial nerve centre, remains the focal point of economic activities.

Source of data

Primary data were collected for the purpose of this study using a structured questionnaire to elicit information from managers at various supermarkets in Lagos state. Information collected include: socio-economic characteristics of the firm, their level of awareness and perception of digital transformation and business analysis.

b) Sample Size and Sampling Technique

The population was gotten from the registered supermarkets list from Business List and Nigerian Directory The number of registered supermarkets in Lagos State was 288.

c) Sampling Procedure

A two-stage sampling procedure was used to obtain relevant information from the various supermarkets in the area of study. Lagos State is administratively structured into five divisions: Lagos (Eko), Ikeja, Epe, Ikorodu and Badagry. In the first stage, Lagos State was purposively selected. This was done due to the high concentration of supermarkets in these area.

The second stage involved the random selection of 87 supermarkets from the study area. These

87 supermarkets constituted the sample size for this study.

d) Analytical Tools and Models

This study made use of descriptive and inferential statistics.

e) Descriptive Statistics

Descriptive statistics such as mean, median, standard deviation, percentages and range for investigating the socio-economic characteristics of the supermarkets in the study area while Tobit regression was used to determine the effect of various IT available on the sales of the supermarket in the study area..

III. RESULTS AND DISCUSSION

Table 1: Job Role

Variables	Frequency	Percent
Manager	15	17.2
Supervisor	16	18.4
Employee	50	57.5
Owner	6	6.9
Total	87	100.0

The data shows that employees make up the majority (57.5%) of the workforce, followed by supervisors (18.4%) and managers (17.2%). Owners are the least represented, accounting for only 6.9%. This indicates a hierarchical structure with a larger workforce and fewer individuals in leadership or ownership roles.

Table 2: Number of years the Supermarket has been in Operation a

Variables	Frequency	Percent
Less than 1 year	10	11.5
1-3 years	37	42.5
4-7 years	10	11.5
8 years or more	30	34.5
Total	87	100.0

The data shows that 42.5% of supermarkets have been operational for 1-3 years, while 34.5% have been in business for 8 years or more, indicating a mix of newer and well-established supermarkets. A smaller portion (11.5% each) has been running for less than 1 year or 4-7 years, suggesting that while some businesses are relatively new, there is also a presence of long-standing supermarkets.

Table 3: How many Branches does the Supermarket have?

Variables	Frequency	Percent
1	19	21.8
2-5	38	43.7
6-10	8	9.2
More than 10	22	25.3
Total	87	100.0

The data shows that 43.7% of supermarkets have 2-5 branches, indicating that most have a moderate level of expansion. 25.3% have more than 10 branches, suggesting a significant presence in the market. 21.8% operate with only 1 branch, reflecting smaller-scale businesses, while 9.2% have 6-10 branches, possibly indicating a growth phase.

Table 4: How Familiar are you with Digital Transformation Concepts

Variables	Frequency	Percent
Not familiar	8	9.2
Slightly familiar	14	16.1
Moderately familiar	26	29.9
Very familiar	39	44.8
Total	87	100.0

The data shows that 74.7% of respondents are at least moderately familiar with digital transformation concepts, with 44.8% being very familiar. Meanwhile, 25.3% have little to no familiarity, highlighting potential knowledge gaps that may need to be addressed through training or awareness programs.

Table 5: Point of Sale (POS)

Variables	Frequency	Percent
Yes	87	100.0
Total	87	100.0

The data shows that 100% of respondents use Point of Sale (POS) systems, indicating complete adoption across all supermarkets surveyed. This suggests that POS systems are a standard and essential tool for transactions in these businesses.

Table 6: Inventory Management Software

Variables	Frequency	Percent
Yes	68	78.2
No	19	21.8
Total	87	100.0

The data shows that 100% of respondents reported using inventory management software, with 78.2% (68 respondents) and 21.8% (19 respondents) both selecting "Yes." However, the duplication of "Yes" in both categories suggests a potential data entry error or the need for clarification on any subcategories that may have been intended.

Table 7: Customer Relationship Management (CRM) Tools

Variables	Frequency	Percent
Yes	36	41.4
No	51	58.6
Total	87	100.0

The data shows that 58.6% of respondents do not use Customer Relationship Management (CRM) tools, while 41.4% do. This indicates that CRM adoption is not yet widespread, though a significant portion of super markets have integrated these tools to manage customer interactions and improve service.

Table 8: Online Shopping Platforms

Variables	Frequency	Percent
Yes	35	40.2
No	52	59.8
Total	87	100.0

The data shows that 40.2% of respondents use online shopping platforms, while 59.8% do not. This suggests that while a significant number of super markets have adopted online shopping, the majority have yet to implement it.

Table 8: Mobile Apps

Variables	Frequency	Percent
Yes	29	33.3
No	58	66.7
Total	87	100.0

The data shows that 33.3% of respondents use mobile apps, while 66.7% do not. This suggests that while some supermarkets have adopted mobile apps, the majority have yet to integrate them into their operations.

Table 9: Social Media for Marketing

Variables	Frequency	Percent
Yes	29	33.3
No	58	66.7
Total	87	100.0

The data shows that 33.3% of respondents use social media for marketing, while 66.7% do not. This suggests that the majority of supermarkets have not yet adopted social media as a marketing tool, though a significant portion has started leveraging it.

Table 10: When did your Supermarket begin Adopting Digital Tools?

Variables	Frequency	Percent
Less than a year ago	11	12.6
1-3 years	42	48.3
4-6 years	12	13.8
More than 6 years ago	22	25.3
Total	87	100.0

The data shows that 48.3% of supermarkets began adopting digital tools 1-3 years ago, while 25.3% started more than 6 years ago. A smaller portion (13.8%) adopted them 4-6 years ago, and 12.6% began less than a year ago. This suggests that most supermarkets have recently embraced digital transformation, while a significant group has been using digital tools for a longer period.

Table 11: How has Digital Transformation Affected the Supermarket's Operations?

Variables	Frequency	Percent
Improved significantly	68	78.2
Improved slightly	19	21.8
Total	87	100.0

The data shows that 78.2% of respondents believe digital transformation has significantly improved the supermarket's operations, while 21.8% reported a slight improvement. This indicates that all respondents observed positive changes, with the majority experiencing a substantial impact on operations.

Table 12: Inventory Management

Variables	Frequency	Percent
Yes	64	73.6
No	23	26.4
Total	87	100.0

The data shows that 73.6% of respondents believe *inventory management* has been effective, while 26.4% do not. This suggests that the majority see improvements in inventory management, though some still face challenges.

Table 13: Customer Satisfaction

Variables	Frequency	Percent
Yes	76	87.4
No	11	12.6
Total	87	100.0

The data shows that 87.4% of respondents believe customer satisfaction has been achieved, while 12.6% do not. This indicates that the vast majority perceive a positive impact on customer satisfaction, with only a small minority expressing concerns.

Table 14: Sales Growth

Variables	Frequency	Percent
Valid	Yes	70
	No	17
Total	87	100.0

The data shows that 70 respondents (the majority) believe that *sales growth* has been achieved, while 17 respondents do not. This suggests that most

respondents have experienced sales growth, while a smaller portion has not observed the same trend.

Table 15: Staff Efficiency

Variables	Frequency	Percent
Yes	53	60.9
No	34	39.1
Total	87	100.0

The data shows that 60.9% of respondents believe *staff efficiency* is a challenge, while 39.1% do not. This suggests that the majority see efficiency issues among staff as a concern, though a significant portion does not perceive it as a major problem.

Table 16: Marketing Effectiveness

Variables	Frequency	Percent
Yes	37	42.5
No	50	57.5
Total	87	100.0

The data shows that 42.5% of respondents believe marketing effectiveness is a challenge, while 57.5% do not. This suggests that while a significant portion faces difficulties in marketing, the majority do not see it as a major issue. Have you experienced any challenges with digital transformation?

Table 17

Variables	Frequency	Percent
Yes	70	80.5
No	14	16.1
Total	87	100.0

The data shows that 80.5% of respondents have experienced challenges with digital transformation, while 16.1% have not. This indicates that the majority face difficulties in adapting to digital transformation, while a small minority do not encounter such challenges.

Table 18: High Cost of Implementation

Variables	Frequency	Percent
Yes	65	73.9
No	22	25.3
Total	87	100.0

The data shows that 73.9% of respondents identified *high cost of implementation* as a challenge, while 25.3% did not. This indicates that the majority consider cost a significant barrier to digital transformation.

Table 19: Staff Resistance to Change

Variables	Frequency	Percent
Yes	52	59.8
No	35	40.2
Total	87	100.0

The data shows that 59.8% of respondents identified staff resistance to change as a challenge, while 40.2% did not. This indicates that resistance to change is a notable obstacle in digital transformation, though a significant portion of staff appears open to it.

Table 20: Lack of Technical Expertise

Variables	Frequency	Percent
Yes	28	32.2
No	59	66.8
Total	87	100.0

The data shows that 32.2% of respondents identified *lack of technical expertise* as a challenge, while 66.8% did not. This suggests that while some face technical skill gaps in digital transformation, the majority do not see it as a significant issue.

Table 21: Integration with Existing Systems

Variables	Frequency	Percent
Yes	29	32.3
No	58	66.7
Total	87	100.0

The data shows that 32.3% of respondents identified *integration with existing systems* as a challenge, while 66.7% did not. This suggests that while some struggle with system integration during digital transformation, the majority do not find it to be a significant issue.

Table 22: Effect of IT on Sales of Products

Technology	Coefficient	Standard Error
Constant	14.4380***	3.3269
Point of sale (POS)	0.9269***	0.2206
Inventory management software	0.2816***	0.0630
Customer relationship management (CRM) tools	0.1685**	0.0772
Online shopping platforms	0.2864	0.3800
Mobile apps	0.0899**	0.03635
Social media for marketing	0.0611	0.0853

The regression table shows the effect of IT on the sales of various products of the respondents in the study area. It was observed that POS was highly significant with a positive coefficient of 0.9269, this implies that supermarkets who adopt the POS technology are more likely to increase their sales with about 92.69%. This could be due to cashless experienced by Nigerians since 2022, while those that

adopt the Inventory management software technology may increase their sales by 28.16%. Also, Customer relationship management (CRM) tools, was significant at 5% percent probability level with a positive coefficient of 0.1685, owing that sale might increase by 16.85% if this technology is adopted. In the same vein, Mobile Application was also significant at 5% probability level with a positive coefficient of 0.0899. This means that a unit increase in the adoption of this technology will lead to 8.99% increase in sales

IV. DISCUSSION

The data reveals that the majority (57.5%) of the workforce consists of employees, followed by supervisors (18.4%) and managers (17.2%). Owners constitute the smallest percentage (6.9%), indicating a hierarchical structure with a larger workforce handling daily operations and fewer individuals in leadership roles. A significant portion (42.5%) of supermarkets has been operational for 1-3 years, while 34.5% have been in business for over 8 years. The presence of both newer and long-standing supermarkets suggests a competitive retail sector. The smaller groups (11.5% each) in the less than 1 year and 4-7 years categories highlight possible challenges in sustainability and growth transitions.

Most supermarkets (43.7%) have between 2-5 branches, indicating moderate expansion. A quarter (25.3%) operate more than 10 branches, showing a strong market presence. Conversely, 21.8% have only one branch, reflecting small-scale businesses. The smallest category (9.2%) falls within 6-10 branches, suggesting a potential transition phase for some businesses. The majority (74.7%) of respondents are at least moderately familiar with digital transformation concepts, with 44.8% being very familiar. However, 25.3% have little to no familiarity, highlighting a potential gap that could be addressed through training programs to enhance digital competence.

A unanimous 100% adoption of POS systems across supermarkets suggests that electronic transaction processing is a standard practice, ensuring efficiency in sales operations. All respondents reported using inventory management software. However, data inconsistencies (Yes responses recorded twice as 78.2% and 21.8%) indicate a potential entry error that requires clarification. CRM tools are not widely adopted, with only 41.4% using them, while 58.6% do not. This indicates room for improvement in customer engagement and service optimization.

While 40.2% of supermarkets use online shopping platforms, the majority (59.8%) have not yet integrated them. This suggests a need for further digital expansion to capture the growing e-commerce market. Only 33.3% of supermarkets utilize mobile apps, while 66.7% do not, showing a significant opportunity to

enhance customer experience through mobile app integration. Similarly, only 33.3% leverage social media for marketing. Given the potential for customer engagement and brand awareness, supermarkets could benefit from expanding their digital marketing efforts.

Most supermarkets (48.3%) began adopting digital tools in the last 1-3 years, while 25.3% have been using them for over 6 years. A smaller percentage (12.6%) started less than a year ago. This indicates a growing trend in digital adoption, with earlier adopters potentially leading in operational efficiency. A majority (78.2%) reported significant operational improvements due to digital transformation, while 21.8% saw only slight improvements, underscoring the effectiveness of digital tools in enhancing supermarket performance.

Most respondents (73.6%) believe inventory management has been effective, though 26.4% do not, indicating that some supermarkets still face challenges in optimizing stock control. A high percentage (87.4%) believe digital transformation has improved customer satisfaction, while 12.6% do not, suggesting a positive impact on service delivery. Most respondents (70) reported sales growth due to digital transformation, whereas 17 did not, indicating a positive influence on revenue generation.

While 60.9% of respondents acknowledge staff efficiency improvements, 39.1% do not, suggesting that further staff training and process optimization may be needed. Only 42.5% believe marketing efforts have been effective, while 57.5% do not, highlighting a gap in leveraging digital marketing strategies. A substantial 80.5% of respondents reported facing challenges in digital transformation, with the most common barriers being high cost of implementation (73.9%), staff resistance to change (59.8%), lack of technical expertise (32.2%), and integration with existing systems (32.3%).

The adoption of Information Technology (IT) in business operations has been widely acknowledged as a critical factor in enhancing sales performance and operational efficiency (Kotler & Keller, 2021). The results of this study indicate that supermarkets utilizing Point of Sale (POS) technology experience a substantial increase in sales by approximately 92.69%, which is highly significant. This finding aligns with the growing impact of cashless transactions in Nigeria, particularly since the Central Bank of Nigeria (CBN) enforced stricter cashless policies in 2022 (CBN, 2022). Studies have shown that POS adoption improves transaction speed, reduces human error, and enhances financial security, leading to increased customer satisfaction and higher sales volumes (Adegbite & Olayemi, 2023).

Furthermore, Inventory Management Software (IMS) was found to positively influence sales, with a coefficient of 0.2816, suggesting that businesses that integrate IMS can improve sales by approximately 28.16%. This result is supported by prior research, which emphasizes that efficient inventory management

minimizes stock shortages, reduces overstocking, and ensures product availability, thereby boosting sales performance (Adebayo et al., 2020). Retailers adopting IMS often experience reduced operational costs and improved supply chain efficiency, which translates to better financial performance (Christopher, 2016).

Additionally, Customer Relationship Management (CRM) tools were significant at a 5% probability level, with a positive coefficient of 0.1685, indicating that CRM adoption can enhance sales by approximately 16.85%. CRM systems enable businesses to collect and analyze customer data, enhance engagement, and improve personalized marketing strategies, which foster customer loyalty and repeat purchases (Davenport & Harris, 2020). Previous studies suggest that firms leveraging CRM solutions experience higher customer retention rates and increased revenue due to improved customer service (Kumar et al., 2019).

Similarly, Mobile Applications were found to significantly impact sales, with a coefficient of 0.0899 at a 5% probability level, implying that a unit increase in mobile application adoption leads to an 8.99% rise in sales. The increasing reliance on mobile commerce (m-commerce) and digital platforms has transformed consumer purchasing behavior, with many customers preferring online transactions due to convenience and accessibility (Smith & Chaffey, 2021). Retail businesses that adopt mobile applications benefit from improved customer engagement, seamless digital payment options, and targeted promotional strategies, which contribute to increased sales performance (Ogunbiyi et al., 2021).

Overall, these findings underscore the importance of IT adoption in modern retail businesses. POS systems, IMS, CRM tools, and mobile applications play vital roles in improving operational efficiency, enhancing customer experiences, and ultimately driving sales growth. These results highlight the need for supermarkets and other retail businesses to embrace digital transformation to remain competitive and responsive to changing market dynamics. Future research could explore the long-term financial sustainability of IT adoption in retail businesses and its broader implications on profitability and market expansion.

V. CONCLUSION

The study highlights the growing adoption of digital tools in supermarkets, with significant benefits in customer satisfaction, sales growth, and operational efficiency. However, challenges such as high implementation costs, staff resistance, and marketing inefficiencies remain key obstacles. Addressing these challenges through better training, investment, and strategy adjustments will enhance the effectiveness of digital transformation in the supermarket sector.

The integration of advanced IT solutions in product management has significantly transformed business operations, particularly in the retail sector. This study examined the effects of information technology on product management by analyzing data from supermarkets in Lagos State. The findings highlight that IT adoption, particularly POS technology and inventory management software, plays a crucial role in improving sales performance.

The results indicate that supermarkets utilizing POS technology experienced a substantial sales increase of approximately 92.69%, likely due to the widespread cashless policy in Nigeria since 2022. Additionally, the adoption of inventory management software contributed to a sales increase of 28.16%, demonstrating the importance of efficient stock tracking and management in optimizing business performance.

These findings underscore the necessity for businesses to embrace digital transformation to enhance operational efficiency and competitiveness. Future research should explore other IT tools and their long-term impacts on product management across different industries. Businesses that leverage IT effectively will be better positioned to adapt to evolving market trends and consumer preferences.

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Analysing the Critical Challenges of Business Start-Up and Young Entrepreneurs in Surat City

By Tulsi Mangukiya & Zeel Mangukiya

Abstract- Start-up give birth to innovative ideas, which immensely contribute for finding answers to many problems of the society. Despite of huge effort of the government, startups are encountering issues such as lack of financial support, competitions etc. unemployment is the major issue of the country it can be only tackled by addressing the challenges faced by startup entrepreneurs. This paper focused on the studied done so far and effort has made to analyse the challenges faced by the entrepreneurs while start up. The aim of the study is to identify the challenges for online business in Surat city, to analyse the challenges for start-up in business in Surat city, to identify platform to promote business on online media. A sample size of 175 respondents was taken for carrying out research. For achieving the objective of the study has used the descriptive research design and primary data collection method for getting the result. Researcher has used Frequency, T-Test, Man witney U test, Kruskal Walis analytical tools to get verified result. It is conducted through this research work that entrepreneurs are facing lots of challenges while start-up of any business. It may because of less work and business experience.

Keywords: start up, innovation, entrepreneurs, challenges, experience.

GJMBR-A Classification: JEL Code: L26



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Analysing the Critical Challenges of Business Start-Up and Young Entrepreneurs in Surat City

Tulsi Mangukiya ^α & Zeel Mangukiya ^σ

Abstract- Start-up give birth to innovative ideas, which immensely contribute for finding answers to many problems of the society. Despite of huge effort of the government, startups are encountering issues such as lack of financial support, competitions etc. unemployment is the major issue of the country it can be only tackled by addressing the challenges faced by startup entrepreneurs. This paper focused on the studied done so far and effort has made to analyse the challenges faced by the entrepreneurs while start up. The aim of the study is to identify the challenges for online business in Surat city, to analyse the challenges for start-up in business in Surat city, to identify platform to promote business on online media. A sample size of 175 respondents was taken for carrying out research. For achieving the objective of the study has used the descriptive research design and primary data collection method for getting the result. Researcher has used Frequency, T-Test, Man witney U test, Kruskal Walis analytical tools to get verified result. It is conducted through this research work that entrepreneurs are facing lots of challenges while start-up of any business. It may because of less work and business experience.

Keywords: start up, innovation, entrepreneurs, challenges, experience.

I. INTRODUCTION

A start up could be defined as a new business that is in the initial stage of business or operation, beginning to grow and is typically financed by an individual or small group of individuals. Startups are nothing but an idea that manifests into a commercial undertaking. Entrepreneurs are the individuals who undertake a new business venture, risk and reward are borne by entrepreneur himself. Entrepreneurship describes a person's ability and drives to insist on a chance to succeed financially, to create new value, or to define a chance, whether they do so independently or as part of an organisation. In this startup era government is doing maximum efforts to benefits. Although government is supporting startup entrepreneurs still there are numerous bottlenecks exist, some are controllable and others are uncontrollable in the hand of entrepreneurs therefor identification of those issues could be the first step. Lack of infrastructure, improper monitoring, unavailability of fund, gathering new customers, financial management, ineffective marketing, establishment of a strong online presence, hiring the right people, building a brand, search for an online communication channel, inadequate market and

technical knowledge and many other issues are discussed in the articles reviewed below.

II. LITERATURE REVIEW

Sabai khin, Daisy mui hung kee, Fauziah md taib, S. asma (2017) researched on the perspectives of start-up entrepreneurs on challenges, support services and entrepreneurial ecosystem. This study aims to explore the challenges nascent entrepreneurs face at the start-up stage, the support services they receive from supporting agencies and their views of the entrepreneurial ecosystem. This paper employs qualitative data that come from semi-structured interviews with seven entrepreneurs who are the founders of the start-up enterprises. The case study brings attention to the importance of entrepreneurial support and guidance in dealing with the challenges faced by start-up entrepreneurs. It also reveals how entrepreneurs perceive the existing ecosystem for entrepreneurs in Malaysia.

Mrs. Anitha, Dr. Veena m, (April 2022) researched on challenges faced by start-up entrepreneurs- A review study. A objective of the study is to analyse the challenges faced by the start-up entrepreneurs. The respective study is based on secondary data collected from research articles, thesis, books. The method of research used is descriptive research method. They conclude that startup give birth to innovative ideas, which immensely contribute for finding answers to many unsought problems of the society. Despite of huge efforts of the government, startups are encountering issues such as lack of financial support, unavailability of marketing opportunity.

Sumansah, Pragya Chaudhary, Saatwik Agrawal, nidhan, Desavath rishit Singh naik, Avinash raj David, Dr. Umakanth s. (April 2023), studied young entrepreneurs and the challenges and barriers while scaling up, this paper aims to explore the success factors of young entrepreneurs under the age of 35 by focusing on their business and personal skills. This study is purely based on secondary data that is a literature review available from various sources such as magazines, journals, publications, internet sources, etc. As a result of investigation into the difficulties and constraints of the era, which was influenced by changes in time, technology, internal and external factors.

Dr. G Suresh babu and Dr. k. Sridevi (December 2019), a study on issues and challenges of

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startup in India. The study is based on the secondary data which has been collected through journals, magazines, newspapers, research papers, books and websites, etc. the aim is to identify various issues and challenges of startup, and government initiatives for the development of startups.in conclusion the current economic scenario in india is on expansion mode. Startups would become unicorns and may become world renowned businesses by expanding into other developing and undeveloped countries.

Ms. Neha gundre, prof. hemraj kawadkar, Indian startup: new opportunities & challenges faced by entrepreneur. This research is essentially focused on the challenges faced by the start up. This research is predicted on the secondary data that has been collected through the books, various websites, research paper, etc. after referring various case studies and observing existing startup management practises researcher has made own analysis and elaborated on various critical challenges faced by startup company.

III. OBJECTIVE OF THE STUDY

- To identify the challenges for online business in Surat city.
- To analyse the challenges for start-up in business in Surat city.
- To identify platform to promote business on online media.

IV. RESEARCH GAP

The study had not been conducted in the area of Surat so it has been considered as a research gap in

Analysis: (Level of understanding of significant issues you are facing while start up)

analysing the challenges for business. so, as a researcher we wanted analyse and study critical challenges of business start-up of the Surat city.

V. STATEMENT OF PROBLEM

From this study the research has covered Surat City. The study would help the future researcher to cover more area and to take more respondents from population. It will help to analyse the critical challenges of business start-up and young entrepreneurs.

VI. RESEARCH METHODOLOGY

The objective of study is “Analysing the critical challenges of online business start-up and young entrepreneurs in Surat city”. For fulfilling the objective researcher has collected primary data source. For that structure questionnaire was used. For research I used convenient sampling techniques of 175 entrepreneurs of Surat city through questionnaire, the majority of the respondents taken are the entrepreneurs who runs the business. Descriptive research design and non-probability sampling method used, after collecting the data that were coded, analysed through SPSS and interpreted accordingly. I used Frequency, T-test, Man witney U test, Kruskal Walis test for analysing the data.

One-Sample T-Test						
	Test Value = 0					
	T	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Establishment of a strong online presence	62.284	174	.000	4.13143	4.0005	4.2623
Hiring the right people	72.958	174	.000	4.04571	3.9363	4.1552
Building a brand	69.004	174	.000	4.09714	3.9800	4.2143
Financial management	75.723	174	.000	4.28000	4.1684	4.3916
Ineffective marketing	65.604	174	.000	4.14286	4.0182	4.2675
Gather new customer	93.424	174	.000	4.36000	4.2679	4.4521
Search for an online communication channel	69.748	174	.000	4.14286	4.0256	4.2601

Interpretation:

Here is the one sample T-test of the understanding level of the entrepreneurs of facing issues while start-up of online business at the 2-tail

significance level with the 95% confidence interval of the difference.

Man Witney U Test Ranks				
	Gender	N	Mean Rank	Sum of Ranks
Establishment of a strong online presence	male	136	90.53	12311.50
	female	39	79.19	3088.50
	Total	175		
Hiring the right people	male	136	89.34	12150.00
	female	39	83.33	3250.00
	Total	175		
Building a brand	male	136	85.61	11642.50
	female	39	96.35	3757.50
	Total	175		
Financial management	male	136	87.01	11833.50
	female	39	91.45	3566.50
	Total	175		
Ineffective marketing	male	136	90.30	12280.50
	female	39	79.99	3119.50
	Total	175		
Gether a new customer	male	136	90.61	12323.50
	female	39	78.88	3076.50
	Total	175		
Search for an online communication channel	male	136	89.21	12132.50
	female	39	83.78	3267.50
	Total	175		

	Establishment of a strong online presence	Hiring the right people	Building a brand	Financial management	Ineffective marketing	Gathering new customer	level of challenges while start up
Mann-Whitney U	2308.500	2470.000	2326.500	2517.500	2339.500	2296.500	2487.500
Wilcoxon W	3088.500	3250.000	11642.500	11833.500	3119.500	3076.500	3267.500
Z	-1.326	-.703	-1.243	-.524	-1.198	-1.426	-.630
Asymp. Sig. (2-tailed)	.185	.482	.214	.600	.231	.154	.529

a. Grouping Variable: gender

Hypothesis:

H0: There is no relationship between demographic factor and variable.

H1: There is relationship between demographic factor and variable.

Interpretation:

From the above table indicate that the relation between variables and demographic factor like gender.

Since the demographic value is greater than 0.05 than null hypothesis is accepted, so there is no relationship between variable and demographic factor, and if the value is less than 0.05 the null hypothesis is rejected, so there is relationship between demographic factor and variable.

Kruskal Wallis Test Ranks

	Age	N	Mean Rank		Age	N	Mean Rank
Establishment of a strong presence	20-30 year	79	89.59	Ineffective marketing	20-30 year	79	86.88
	31-40 year	75	85.49		31-40 year	75	89.95
	41-50 Year	18	86.42		41-50 Year	18	76.78
	50+ year	3	118.33		50+ year	3	136.00
	Total	175			Total	175	
Hiring the right people	20-30 year	79	86.84	Gathering new customer	20-30 year	79	88.79
	31-40 year	75	87.60		31-40 year	75	85.83
	41-50 Year	18	91.78		41-50 Year	18	88.69
	50+ year	3	106.00		50+ year	3	117.17
	Total	175			Total	175	
Building a Brand	20-30 year	79	87.80	Search for an online Communication channel	20-30 year	79	85.55
	31-40 year	75	90.77		31-40 year	75	88.18
	41-50 Year	18	75.17		41-50 Year	18	89.75
	50+ year	3	101.00		50+ year	3	137.50
	Total	175			Total	175	
Financial management	20-30 year	79	86.88				
	31-40 year	75	89.95				
	41-50 Year	18	76.78				
	50+ year	3	136.00				
	Total	175					

Test Statistics^{a,b}

	Establishment of a Strong Online Presence	Hiring the Right People	Building a Brand	Financial Management	Ineffective Marketing	Gathering New Customer	Level of Challenges while Start Up
Chi-Square	1.572	.610	1.791	4.395	1.320	3.843	1.917
Asymp. Sig.	.666	.894	.617	.222	.725	.279	.590

a. Kruskal Wallis Test

b. Grouping Variable: age

Hypothesis:

H0: There is no is no relationship between demographic factor and variable.

H1: There is relationship between demographic factor and variable.

Interpretation:

From the above table indicate that the relation between variables and demographic factor like age. Since the demographic value is greater than 0.05 than null hypothesis is accepted, so there is no relationship between variable and demographic factor, and if the value is less than 0.05 the null hypothesis is rejected, so there is relationship between demographic factor and variable.

VII. FINDING

We can interpret that, from all the respondents 136 are males whereas 39 are females.

The majority respondents were from the age group of 21-30 which contributes 45.1% of the total entrepreneurs.

68 No of respondents are graduated which constituted highest 38.9% of sample population.

91 no of respondents are unmarried which consist 52% of the total respondents.

From above entrepreneur's majority entrepreneurs have 5-10 years of work experience which mean 38.9%.

And they are running their own business for 3-6 years which mean 38.9% (68) of total population.

Motivators, friends and family are the idol for entrepreneur to become a successful entrepreneur which carries 32.6%, 28.6% and 24.0% respectively.

Most generally 47.4% (83) entrepreneurs are doing their business in service sector.

Most used type of organisation by entrepreneurs are partnership which carries 41.1% (72) of total entrepreneurs. Because of they do not want take any kind of risk in their business.

Entrepreneurs are used bank loan while start-up their business. It might because of lack of fund, savings, family support and all.

Major challenges while start ups are establishment of strong online presence, hiring the right people, building a brand, financial management, effective marketing, communication channel. Majority of male (136) are facing these issues because the ratio of entrepreneurs of male are more than the female (39). And a age group of 20-30 are facing these are the challenges more because they are just started their career or business and they have less business experience than the other age groups.

Instagram, Facebook, and you tube (17.1%, 29.1%, 35.4%) are the most useful social media platform can help entrepreneurs the most of time to make business popular.

Teenagers (20.6%), young agers (40.0%), and adults (29.1%) are the target customer for the entrepreneurs, because they all are aware about online websites, apps, and the offers.

Most of the entrepreneurs are think that. partially (107-61.1%) the political background of the country will affect the business while start-up.

Sponsors are the most used full to collaborate to make business successful. Which carries 61 no of total respondents (34.9%).

VIII. CONCLUSION

From study we analysis that number of males are more than female but the female is not less in entrepreneurial journey in current scenario. They were from the age group 21-30. Most of the entrepreneurs are graduated than majority of entrepreneurs have work experience of 5-10 years but as a entrepreneurial experience they have is 0-3 years. Majority of the entrepreneurs are married.

Friend, motivators, family are become idol to the major of the entrepreneurs. And they are working in service, distribution, and manufacturing sectors. They are running partnership and corporation type of organisation. Majority of the entrepreneurs are taking loans from bank to run their business than the taking benefit of government schemes. There are so many social media platforms for the entrepreneurs for making their business popular. The target customers for the entrepreneurs are teenagers, young agers, and old agers. According to entrepreneurs' influencers, sponsors are help them to promote their business.

There are so many challenges for entrepreneurs while starting of any business like, establishment of a strong online presence, hiring the right people, building a brand, financial management, ineffective marketing, gathering customers, etc... majority of the male are facing these changes because the ratio of female is less than male. Having age group of 21-30 are faces this kind of changes are the most because they have less experience compare to others and they have just entered in to their career.

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Career

Credibility

Reputation

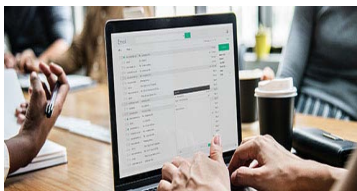
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Financial



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Credibility

Reputation



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Career

Credibility

Financial

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Credibility

Exclusive

Reputation

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ASSOCIATE OF MANAGEMENT AND BUSINESS RESEARCH COUNCIL is the membership of Global Journals awarded to individuals that the Open Association of Research Society judges to have made a 'substantial contribution to the improvement of computer science, technology, and electronics engineering.

The primary objective is to recognize the leaders in research and scientific fields of the current era with a global perspective and to create a channel between them and other researchers for better exposure and knowledge sharing. Members are most eminent scientists, engineers, and technologists from all across the world. Associate membership can later be promoted to Fellow Membership. Associates are elected for life through a peer review process on the basis of excellence in the respective domain. There is no limit on the number of new nominations made in any year. Each year, the Open Association of Research Society elect up to 12 new Associate Members.



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Career

Credibility

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Reputation



CERTIFICATE

CERTIFICATE, LOR AND LASER-MOMENTO

Associates receive a printed copy of a certificate signed by our Chief Author that may be used for academic purposes and a personal recommendation letter to the dean of member's university.

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Credibility

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DESIGNATION

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Career

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Reputation

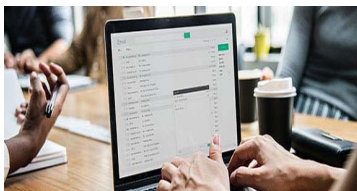
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<p>\$4800 lifetime designation</p> <hr/> <p>Certificate, LoR and Momento 2 discounted publishing/year Gradation of Research 10 research contacts/day 1 GB Cloud Storage GJ Community Access</p>	<p>\$6800 lifetime designation</p> <hr/> <p>Certificate, LoR and Momento Unlimited discounted publishing/year Gradation of Research Unlimited research contacts/day 5 GB Cloud Storage Online Presense Assistance GJ Community Access</p>	<p>\$12500.00 organizational</p> <hr/> <p>Certificates, LoRs and Momentos Unlimited free publishing/year Gradation of Research Unlimited research contacts/day Unlimited Cloud Storage Online Presense Assistance GJ Community Access</p>	<p>APC per article</p> <hr/> <p>GJ Community Access</p>



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We accept the manuscript submissions in any standard (generic) format.

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Authors should submit their complete paper/article, including text illustrations, graphics, conclusions, artwork, and tables. Authors who are not able to submit manuscript using the form above can email the manuscript department at submit@globaljournals.org or get in touch with chiefeditor@globaljournals.org if they wish to send the abstract before submission.

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Authors must ensure the information provided during the submission of a paper is authentic. Please go through the following checklist before submitting:

1. Authors must go through the complete author guideline and understand and *agree to Global Journals' ethics and code of conduct*, along with author responsibilities.
2. Authors must accept the privacy policy, terms, and conditions of Global Journals.
3. Ensure corresponding author's email address and postal address are accurate and reachable.
4. Manuscript to be submitted must include keywords, an abstract, a paper title, co-author(s) names and details (email address, name, phone number, and institution), figures and illustrations in vector format including appropriate captions, tables, including titles and footnotes, a conclusion, results, acknowledgments and references.
5. Authors should submit paper in a ZIP archive if any supplementary files are required along with the paper.
6. Proper permissions must be acquired for the use of any copyrighted material.
7. Manuscript submitted *must not have been submitted or published elsewhere* and all authors must be aware of the submission.

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Authors are solely responsible for all the plagiarism that is found. The author must not fabricate, falsify or plagiarize existing research data. The following, if copied, will be considered plagiarism:

- Words (language)
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- Findings
- Writings
- Diagrams
- Graphs
- Illustrations
- Lectures



- Printed material
- Graphic representations
- Computer programs
- Electronic material
- Any other original work

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1. Substantial contributions to the conception and acquisition of data, analysis, and interpretation of findings.
2. Drafting the paper and revising it critically regarding important academic content.
3. Final approval of the version of the paper to be published.

Changes in Authorship

The corresponding author should mention the name and complete details of all co-authors during submission and in manuscript. We support addition, rearrangement, manipulation, and deletions in authors list till the early view publication of the journal. We expect that corresponding author will notify all co-authors of submission. We follow COPE guidelines for changes in authorship.

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Unless specified in the notification, the Editorial Board's decision on publication of the paper is final and cannot be appealed before making the major change in the manuscript.

Acknowledgments

Contributors to the research other than authors credited should be mentioned in Acknowledgments. The source of funding for the research can be included. Suppliers of resources may be mentioned along with their addresses.

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Global Journals is in partnership with various universities, laboratories, and other institutions worldwide in the research domain. Authors are requested to disclose their source of funding during every stage of their research, such as making analysis, performing laboratory operations, computing data, and using institutional resources, from writing an article to its submission. This will also help authors to get reimbursements by requesting an open access publication letter from Global Journals and submitting to the respective funding source.

PREPARING YOUR MANUSCRIPT

Authors can submit papers and articles in an acceptable file format: MS Word (doc, docx), LaTeX (.tex, .zip or .rar including all of your files), Adobe PDF (.pdf), rich text format (.rtf), simple text document (.txt), Open Document Text (.odt), and Apple Pages (.pages). Our professional layout editors will format the entire paper according to our official guidelines. This is one of the highlights of publishing with Global Journals—authors should not be concerned about the formatting of their paper. Global Journals accepts articles and manuscripts in every major language, be it Spanish, Chinese, Japanese, Portuguese, Russian, French, German, Dutch, Italian, Greek, or any other national language, but the title, subtitle, and abstract should be in English. This will facilitate indexing and the pre-peer review process.

The following is the official style and template developed for publication of a research paper. Authors are not required to follow this style during the submission of the paper. It is just for reference purposes.



Manuscript Style Instruction (Optional)

- Microsoft Word Document Setting Instructions.
- Font type of all text should be Swis721 Lt BT.
- Page size: 8.27" x 11", left margin: 0.65, right margin: 0.65, bottom margin: 0.75.
- Paper title should be in one column of font size 24.
- Author name in font size of 11 in one column.
- Abstract: font size 9 with the word "Abstract" in bold italics.
- Main text: font size 10 with two justified columns.
- Two columns with equal column width of 3.38 and spacing of 0.2.
- First character must be three lines drop-capped.
- The paragraph before spacing of 1 pt and after of 0 pt.
- Line spacing of 1 pt.
- Large images must be in one column.
- The names of first main headings (Heading 1) must be in Roman font, capital letters, and font size of 10.
- The names of second main headings (Heading 2) must not include numbers and must be in italics with a font size of 10.

Structure and Format of Manuscript

The recommended size of an original research paper is under 15,000 words and review papers under 7,000 words. Research articles should be less than 10,000 words. Research papers are usually longer than review papers. Review papers are reports of significant research (typically less than 7,000 words, including tables, figures, and references)

A research paper must include:

- a) A title which should be relevant to the theme of the paper.
- b) A summary, known as an abstract (less than 150 words), containing the major results and conclusions.
- c) Up to 10 keywords that precisely identify the paper's subject, purpose, and focus.
- d) An introduction, giving fundamental background objectives.
- e) Resources and techniques with sufficient complete experimental details (wherever possible by reference) to permit repetition, sources of information must be given, and numerical methods must be specified by reference.
- f) Results which should be presented concisely by well-designed tables and figures.
- g) Suitable statistical data should also be given.
- h) All data must have been gathered with attention to numerical detail in the planning stage.

Design has been recognized to be essential to experiments for a considerable time, and the editor has decided that any paper that appears not to have adequate numerical treatments of the data will be returned unrefereed.

- i) Discussion should cover implications and consequences and not just recapitulate the results; conclusions should also be summarized.
- j) There should be brief acknowledgments.
- k) There ought to be references in the conventional format. Global Journals recommends APA format.

Authors should carefully consider the preparation of papers to ensure that they communicate effectively. Papers are much more likely to be accepted if they are carefully designed and laid out, contain few or no errors, are summarizing, and follow instructions. They will also be published with much fewer delays than those that require much technical and editorial correction.

The Editorial Board reserves the right to make literary corrections and suggestions to improve brevity.



FORMAT STRUCTURE

It is necessary that authors take care in submitting a manuscript that is written in simple language and adheres to published guidelines.

All manuscripts submitted to Global Journals should include:

Title

The title page must carry an informative title that reflects the content, a running title (less than 45 characters together with spaces), names of the authors and co-authors, and the place(s) where the work was carried out.

Author details

The full postal address of any related author(s) must be specified.

Abstract

The abstract is the foundation of the research paper. It should be clear and concise and must contain the objective of the paper and inferences drawn. It is advised to not include big mathematical equations or complicated jargon.

Many researchers searching for information online will use search engines such as Google, Yahoo or others. By optimizing your paper for search engines, you will amplify the chance of someone finding it. In turn, this will make it more likely to be viewed and cited in further works. Global Journals has compiled these guidelines to facilitate you to maximize the web-friendliness of the most public part of your paper.

Keywords

A major lynchpin of research work for the writing of research papers is the keyword search, which one will employ to find both library and internet resources. Up to eleven keywords or very brief phrases have to be given to help data retrieval, mining, and indexing.

One must be persistent and creative in using keywords. An effective keyword search requires a strategy: planning of a list of possible keywords and phrases to try.

Choice of the main keywords is the first tool of writing a research paper. Research paper writing is an art. Keyword search should be as strategic as possible.

One should start brainstorming lists of potential keywords before even beginning searching. Think about the most important concepts related to research work. Ask, "What words would a source have to include to be truly valuable in a research paper?" Then consider synonyms for the important words.

It may take the discovery of only one important paper to steer in the right keyword direction because, in most databases, the keywords under which a research paper is abstracted are listed with the paper.

Numerical Methods

Numerical methods used should be transparent and, where appropriate, supported by references.

Abbreviations

Authors must list all the abbreviations used in the paper at the end of the paper or in a separate table before using them.

Formulas and equations

Authors are advised to submit any mathematical equation using either MathJax, KaTeX, or LaTeX, or in a very high-quality image.

Tables, Figures, and Figure Legends

Tables: Tables should be cautiously designed, uncrowned, and include only essential data. Each must have an Arabic number, e.g., Table 4, a self-explanatory caption, and be on a separate sheet. Authors must submit tables in an editable format and not as images. References to these tables (if any) must be mentioned accurately.



Figures

Figures are supposed to be submitted as separate files. Always include a citation in the text for each figure using Arabic numbers, e.g., Fig. 4. Artwork must be submitted online in vector electronic form or by emailing it.

PREPARATION OF ELETRONIC FIGURES FOR PUBLICATION

Although low-quality images are sufficient for review purposes, print publication requires high-quality images to prevent the final product being blurred or fuzzy. Submit (possibly by e-mail) EPS (line art) or TIFF (halftone/ photographs) files only. MS PowerPoint and Word Graphics are unsuitable for printed pictures. Avoid using pixel-oriented software. Scans (TIFF only) should have a resolution of at least 350 dpi (halftone) or 700 to 1100 dpi (line drawings). Please give the data for figures in black and white or submit a Color Work Agreement form. EPS files must be saved with fonts embedded (and with a TIFF preview, if possible).

For scanned images, the scanning resolution at final image size ought to be as follows to ensure good reproduction: line art: >650 dpi; halftones (including gel photographs): >350 dpi; figures containing both halftone and line images: >650 dpi.

Color charges: Authors are advised to pay the full cost for the reproduction of their color artwork. Hence, please note that if there is color artwork in your manuscript when it is accepted for publication, we would require you to complete and return a Color Work Agreement form before your paper can be published. Also, you can email your editor to remove the color fee after acceptance of the paper.

TIPS FOR WRITING A GOOD QUALITY MANAGEMENT RESEARCH PAPER

Techniques for writing a good quality management and business research paper:

1. Choosing the topic: In most cases, the topic is selected by the interests of the author, but it can also be suggested by the guides. You can have several topics, and then judge which you are most comfortable with. This may be done by asking several questions of yourself, like "Will I be able to carry out a search in this area? Will I find all necessary resources to accomplish the search? Will I be able to find all information in this field area?" If the answer to this type of question is "yes," then you ought to choose that topic. In most cases, you may have to conduct surveys and visit several places. Also, you might have to do a lot of work to find all the rises and falls of the various data on that subject. Sometimes, detailed information plays a vital role, instead of short information. Evaluators are human: The first thing to remember is that evaluators are also human beings. They are not only meant for rejecting a paper. They are here to evaluate your paper. So present your best aspect.

2. Think like evaluators: If you are in confusion or getting demotivated because your paper may not be accepted by the evaluators, then think, and try to evaluate your paper like an evaluator. Try to understand what an evaluator wants in your research paper, and you will automatically have your answer. Make blueprints of paper: The outline is the plan or framework that will help you to arrange your thoughts. It will make your paper logical. But remember that all points of your outline must be related to the topic you have chosen.

3. Ask your guides: If you are having any difficulty with your research, then do not hesitate to share your difficulty with your guide (if you have one). They will surely help you out and resolve your doubts. If you can't clarify what exactly you require for your work, then ask your supervisor to help you with an alternative. He or she might also provide you with a list of essential readings.

4. Use of computer is recommended: As you are doing research in the field of management and business then this point is quite obvious. Use right software: Always use good quality software packages. If you are not capable of judging good software, then you can lose the quality of your paper unknowingly. There are various programs available to help you which you can get through the internet.

5. Use the internet for help: An excellent start for your paper is using Google. It is a wondrous search engine, where you can have your doubts resolved. You may also read some answers for the frequent question of how to write your research paper or find a model research paper. You can download books from the internet. If you have all the required books, place importance on reading, selecting, and analyzing the specified information. Then sketch out your research paper. Use big pictures: You may use encyclopedias like Wikipedia to get pictures with the best resolution. At Global Journals, you should strictly follow here.



6. Bookmarks are useful: When you read any book or magazine, you generally use bookmarks, right? It is a good habit which helps to not lose your continuity. You should always use bookmarks while searching on the internet also, which will make your search easier.

7. Revise what you wrote: When you write anything, always read it, summarize it, and then finalize it.

8. Make every effort: Make every effort to mention what you are going to write in your paper. That means always have a good start. Try to mention everything in the introduction—what is the need for a particular research paper. Polish your work with good writing skills and always give an evaluator what he wants. Make backups: When you are going to do any important thing like making a research paper, you should always have backup copies of it either on your computer or on paper. This protects you from losing any portion of your important data.

9. Produce good diagrams of your own: Always try to include good charts or diagrams in your paper to improve quality. Using several unnecessary diagrams will degrade the quality of your paper by creating a hodgepodge. So always try to include diagrams which were made by you to improve the readability of your paper. Use of direct quotes: When you do research relevant to literature, history, or current affairs, then use of quotes becomes essential, but if the study is relevant to science, use of quotes is not preferable.

10. Use proper verb tense: Use proper verb tenses in your paper. Use past tense to present those events that have happened. Use present tense to indicate events that are going on. Use future tense to indicate events that will happen in the future. Use of wrong tenses will confuse the evaluator. Avoid sentences that are incomplete.

11. Pick a good study spot: Always try to pick a spot for your research which is quiet. Not every spot is good for studying.

12. Know what you know: Always try to know what you know by making objectives, otherwise you will be confused and unable to achieve your target.

13. Use good grammar: Always use good grammar and words that will have a positive impact on the evaluator; use of good vocabulary does not mean using tough words which the evaluator has to find in a dictionary. Do not fragment sentences. Eliminate one-word sentences. Do not ever use a big word when a smaller one would suffice. Verbs have to be in agreement with their subjects. In a research paper, do not start sentences with conjunctions or finish them with prepositions. When writing formally, it is advisable to never split an infinitive because someone will (wrongly) complain. Avoid clichés like a disease. Always shun irritating alliteration. Use language which is simple and straightforward. Put together a neat summary.

14. Arrangement of information: Each section of the main body should start with an opening sentence, and there should be a changeover at the end of the section. Give only valid and powerful arguments for your topic. You may also maintain your arguments with records.

15. Never start at the last minute: Always allow enough time for research work. Leaving everything to the last minute will degrade your paper and spoil your work.

16. Multitasking in research is not good: Doing several things at the same time is a bad habit in the case of research activity. Research is an area where everything has a particular time slot. Divide your research work into parts, and do a particular part in a particular time slot.

17. Never copy others' work: Never copy others' work and give it your name because if the evaluator has seen it anywhere, you will be in trouble. Take proper rest and food: No matter how many hours you spend on your research activity, if you are not taking care of your health, then all your efforts will have been in vain. For quality research, take proper rest and food.

18. Go to seminars: Attend seminars if the topic is relevant to your research area. Utilize all your resources.

19. Refresh your mind after intervals: Try to give your mind a rest by listening to soft music or sleeping in intervals. This will also improve your memory. Acquire colleagues: Always try to acquire colleagues. No matter how sharp you are, if you acquire colleagues, they can give you ideas which will be helpful to your research.

20. Think technically: Always think technically. If anything happens, search for its reasons, benefits, and demerits. Think and then print: When you go to print your paper, check that tables are not split, headings are not detached from their descriptions, and page sequence is maintained.



21. Adding unnecessary information: Do not add unnecessary information like "I have used MS Excel to draw graphs." Irrelevant and inappropriate material is superfluous. Foreign terminology and phrases are not apropos. One should never take a broad view. Analogy is like feathers on a snake. Use words properly, regardless of how others use them. Remove quotations. Puns are for kids, not grunt readers. Never oversimplify: When adding material to your research paper, never go for oversimplification; this will definitely irritate the evaluator. Be specific. Never use rhythmic redundancies. Contractions shouldn't be used in a research paper. Comparisons are as terrible as clichés. Give up ampersands, abbreviations, and so on. Remove commas that are not necessary. Parenthetical words should be between brackets or commas. Understatement is always the best way to put forward earth-shaking thoughts. Give a detailed literary review.

22. Report concluded results: Use concluded results. From raw data, filter the results, and then conclude your studies based on measurements and observations taken. An appropriate number of decimal places should be used. Parenthetical remarks are prohibited here. Proofread carefully at the final stage. At the end, give an outline to your arguments. Spot perspectives of further study of the subject. Justify your conclusion at the bottom sufficiently, which will probably include examples.

23. Upon conclusion: Once you have concluded your research, the next most important step is to present your findings. Presentation is extremely important as it is the definite medium through which your research is going to be in print for the rest of the crowd. Care should be taken to categorize your thoughts well and present them in a logical and neat manner. A good quality research paper format is essential because it serves to highlight your research paper and bring to light all necessary aspects of your research.

INFORMAL GUIDELINES OF RESEARCH PAPER WRITING

Key points to remember:

- Submit all work in its final form.
- Write your paper in the form which is presented in the guidelines using the template.
- Please note the criteria peer reviewers will use for grading the final paper.

Final points:

One purpose of organizing a research paper is to let people interpret your efforts selectively. The journal requires the following sections, submitted in the order listed, with each section starting on a new page:

The introduction: This will be compiled from reference matter and reflect the design processes or outline of basis that directed you to make a study. As you carry out the process of study, the method and process section will be constructed like that. The results segment will show related statistics in nearly sequential order and direct reviewers to similar intellectual paths throughout the data that you gathered to carry out your study.

The discussion section:

This will provide understanding of the data and projections as to the implications of the results. The use of good quality references throughout the paper will give the effort trustworthiness by representing an alertness to prior workings.

Writing a research paper is not an easy job, no matter how trouble-free the actual research or concept. Practice, excellent preparation, and controlled record-keeping are the only means to make straightforward progression.

General style:

Specific editorial column necessities for compliance of a manuscript will always take over from directions in these general guidelines.

To make a paper clear: Adhere to recommended page limits.

Mistakes to avoid:

- Insertion of a title at the foot of a page with subsequent text on the next page.
- Separating a table, chart, or figure—confine each to a single page.
- Submitting a manuscript with pages out of sequence.
- In every section of your document, use standard writing style, including articles ("a" and "the").
- Keep paying attention to the topic of the paper.



- Use paragraphs to split each significant point (excluding the abstract).
- Align the primary line of each section.
- Present your points in sound order.
- Use present tense to report well-accepted matters.
- Use past tense to describe specific results.
- Do not use familiar wording; don't address the reviewer directly. Don't use slang or superlatives.
- Avoid use of extra pictures—include only those figures essential to presenting results.

Title page:

Choose a revealing title. It should be short and include the name(s) and address(es) of all authors. It should not have acronyms or abbreviations or exceed two printed lines.

Abstract: This summary should be two hundred words or less. It should clearly and briefly explain the key findings reported in the manuscript and must have precise statistics. It should not have acronyms or abbreviations. It should be logical in itself. Do not cite references at this point.

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- To-the-point depiction of the research.
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Approach:

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Approach:

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Approach:

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<i>References</i>	Complete and correct format, well organized	Beside the point, Incomplete	Wrong format and structuring



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