The Influence of Social Media on Workforce Upskilling: A Critical Analysis of Learning, Networking, and Career Advancement Opportunities

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Abstract. The research work investigates how social media networks affect workforce training development between professional contacts and digital education and career enhancement. A quantitative research design utilises secondary data, which was analysed using SPSS, to study the factors affecting professional social media engagement development. The research begins by outlining its background information and specific goals and explains why this analysis is important. This research explores the skill-building practice and career mentoring services accessible through LinkedIn, Twitter and YouTube platforms. Chapter two examines previous research about social media's effect on workforce upskilling employing Social Cognitive Career Theory (SCCT) as a theoretical base. The research methodology section of Chapter Three describes how the author designed their study together with their data collection procedures and analysis approaches especially when utilising secondary data through SPSS statistical software. The fourth chapter demonstrates data analysis findings using Pearson correlation analysis with multiple regressions, identifying important social media workforce upskilling relationships. The research ends by evaluating results which explain how social media builds career opportunities while examining challenges that candidates may face.

Keywords: social media, workforce upskilling and networking.

INTRODUCTION

The speed at which digital technology is developing has changed how professionals network, study, and advance their professions. Because they offer inexpensive learning resources, networking opportunities, and career development strategies, social media sites like LinkedIn, Twitter, and YouTube have emerged as crucial resources for professional growth [34]. Traditional workforce training programs are typically costly and time-consuming, whereas social media offers low-cost, flexible, and self-directed learning. Applying social media for professional development stems from the Social Cognitive Career Theory (SCCT). Authors [39] hold that personal objectives, outcome expectations, and self-efficacy impact career choice and skill acquisition. Social media fosters these conditions by facilitating virtual mentorship, professional networking, and interactive learning; hence, it is a significant force

in workforce upskilling [22]. The development of social learning theories and web-based learning platforms has also boosted digital upskilling. Social media's rapid development and extensive use have completely changed how people interact daily [15]. Their pervasiveness has even permeated the workplace, enabling knowledge work and organisational communication that would not be feasible without them [43]. Due to the tremendous success of social media platforms like Facebook and Twitter, there is great interest in using social networking to speed up communication between various Internet of Things (IoT) devices [68]. Social networks and the Internet of Things are different [68]. A new paradigm known as the Social Internet of Things (SIoT) was recently presented from a social networking perspective to establish social links among intelligent devices. Things that are "friends" with one another can increase their trust in one another,

develop new friendships, share information, use the capabilities of other things, and work together to achieve a common goal [6]. Although the idea of SIoT is very alluring, not everyone knows its features, advantages, and difficulties because it is still a relatively new concept. Thankfully, most of SIoT's characteristics are similar to those of human social networks [7]. Using the social media network analogy, we can see how social media affects organisational environments and determine whether SIoT is possible. Numerous studies have examined social media's possibilities in the workplace. For instance, the author [30] examined the usage of internal corporate blogs in a multinational IT company and found that blog users benefited from the development of informal social networks, straightforward communication, and knowledge sharing. According to [43], Microsoft employees use social networking sites (SNSs) extensively. Work-related benefits include obtaining resources, exchanging expertise, and fostering professional and personal relationships.

Statement of problem. Learning and professional networking have become imperative for career development in the evolving digital economy. Social media networks like LinkedIn, Twitter, and YouTube have developed as breakthrough platforms that provide readily available learning resources, virtual mentorship, and international networking. Unlike conventional upskilling mechanisms that are bound to involve gigantic financial and time commitments, social media enables independent, flexible learning and professional interaction. However, while it is increasingly utilised in workforce development, its effectiveness and pitfalls of social media-based upskilling are less explored. Among the issues is the validity and standardisation of learning acquired from social media. While working professionals can access plenty of industry knowledge and training materials, the absence of formal accreditation makes one wonder if employers will accept it. In addition, the quality of content varies greatly, and its dependability is difficult to establish compared to systematic education programs. Besides, social media offers networking and career advancement, although its impact on actual career success is uncertain. While websites allow professionals to interact with industry leaders, recruiters, and peers, many cannot translate the online connections into qualitative career opportunities. The degree to which social networking

impacts employability and career mobility as opposed to conventional networking is uncertain.

Furthermore, relying too much on social media for education and job advancement raises the risks of digital distraction, information overload, and privacy invasion. Sifting through vast amounts of content to find false information is difficult, which minimises social media as a learning tool. To address these issues, this research aims to evaluate social media's role in workforce upskilling, assess its usefulness for career advancement, and look into its drawbacks. The results will have significant ramifications for agencies, professionals, and legislators to inform plans on using social media as a powerful tool for workforce transformation to the digital age.

Research Questions

1. How does social media facilitate workforce upskilling through informal and formal learning opportunities?

2. How does professional networking via social media impact career development and industry engagement?

3. To what extent does social media engagement influence career advancement and employability?

Aim & Objectives

1. To assess the effectiveness of social media as a learning tool for workforce upskilling.

2. To examine the role of professional networking on social media in facilitating career development.

3. Evaluate how social media engagement contributes to career progression and employability.

Justification of the research. The dynamic nature of work in the digital economy demands continuous learning, and social media is one enabler of workforce upskilling. Empirical evidence suggests that professionals engaged in social media for skill development have improved job prospects and career growth. Despite this, there is scant in-depth empirical evidence regarding social media performance and issues as a tool for workers' growth. This study has immense applicability to diverse stakeholders. To practitioners, it offers solutions for employing social media to facilitate learning, networking, and career advancement. For businesses, it offers a more thorough examination of how social media-focused learning strategies might be used to staff up-

skilling initiatives. The study also offers suggestions for e-professional development initiatives and training in digital skills to policymakers. The study highlights the changing role of social media in career progression and professional growth, filling in these knowledge gaps and contributing to the larger narrative of the digital workforce transition.

Scope of study. This study investigates how social media might help reskill workers through networking, education, and job advancement. It examines how professionals build careers, connect with professional networks, and acquire new skills using websites like LinkedIn, YouTube, and Twitter. The research uses secondary sources of information from academic literature, industry studies, and business research to apply an evidence-based research approach. Statistical methods employing SPSS will determine upskilling patterns and relationships facilitated through social media. Social media-based virtual mentorship, digital learning, and professional growth are the research focus, not traditional training methods. Workforce trends will be addressed geographically across the world, reflecting industries that are making use of digital learning strategies. This study contributes to the current discussion about career mobility and digital transformation in the modern workforce by examining the role of micro-learning, e-learning, and social media analysis.

Outline of the Methodology. The study in this paper is based on a quantitative method with secondary data sources utilised to examine the role of social media in workforce upskilling. Data comes from the Internet, peer-reviewed journals, academic journals, periodicals, research gate materials, business reports, and expert analyses. Statistical testing with Statistical Package for the Social Sciences (SPSS) supports identifying the relationship between social media use, learning participation, and professional success.

Literature Review

The digital era has transformed workforce development and turned social media into a principal medium for learning, professional networking, and career development. As industries change continuously, workers and job seekers increasingly turn to digital platforms for new skills, networking with professionals, and job opportunities. With an emphasis on the impact of social media on networking, career advancement, and professional learning, this chapter critically examines the literature on using social media to skill up the workforce. The paper also discusses the drawbacks and restrictions of using social media for professional growth before offering a relevant theoretical framework to support its significance.

Social Media as an Instrument for Education and Skill Development. Social network sites have revolutionised how human beings attain learning and skills. Unlike conventional training methods, social media provides easy access to training content, peer discussions, and expert opinions simultaneously. Research attests that LinkedIn Learning, Coursera, and Udemy have become top-notch sites where working persons undertake self-directed learning to improve vocational skills [35]. Social media facilitates collaborative learning spaces since users can share knowledge and skills through virtual communities, professional networks, and open-access courses [22].

Additionally, Twitter and YouTube facilitate micro-learning, whereby experts absorb short, targeted content to gain specific competencies. Despite online platforms learning's advantages, studies reveal the credibility of content, information overload, and distraction online [63]. The lack of formal accreditation in certain social media-based tools raises questions about the validity of social media-based upskilling [69]. Social media platforms have revolutionised learning and skills acquisition. Social media presents easier access to learning resources, peer forums, and expert viewpoints than conventional learning processes. Teachers started experimenting with various online resources, such as blogs, to supplement traditional instruction in the early 2000s, when social media was first used in higher education for teaching and learning [24, 32]. Platforms like blogs, wikis, discussion boards, and forums come first. Were they a forerunner of contemporary social media, which allowed for asynchronous messaging exchanges between students and teachers? These conversations date back to the early 1970s. In the early 2000s, when computer technology was utilised to facilitate human communication, computer-mediated communication (CMC) was widely used [59]. A commonly used term before the term "social media" was coined in the early 2000s, and by the late 2000s, it was widely understood [34].

The introduction of iOS and Android phone operating systems apps enabled people to utilise social media at any time and from any location, resulting in a revolution that increased social media use and adoption. Introducing social media sites like Facebook, Twitter, and YouTube opened up new channels for student-teacher cooperation, communication, content exchange, and social network connection and interaction [13]. According to their definition, social networking sites are web-based services that enable users to (1) create a public or semi-public profile within a system, (2) list other users with whom they are connected, and (3) view and navigate their list of connections and those created by others within the system. Authors [13] have outlined a general definition of social media as a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0 and allow the creation and exchange of user-generated content. Social media sites and short descriptions are located chronologically in Table 1. The table provides globally recognised sites and tools and includes all such sites in the systematic review papers. All the top 10 social media sites have over 700 million active users, and the leader, Facebook, has close to 3 billion [19]. Teachers began to use these sites for all types of academic activities, including announcements, class discussions, sharing resources, and collaborative assignments [32]. The live update and alert features and the facility to filter messages using hashtags have enabled social media interactions to be more real-time and collaborative. Platforms like LinkedIn were employed for professional development and networking, whereas Instagram and Pinterest were found useful in posting visual user-generated content related to coursework and creative endeavours. The use of social media in higher education has further evolved with the growth of platforms like Snapchat and TikTok, alongside stories to post transient content that is typically only visible for 24 hours. Table 1 provides a broad classification of social media tools by their primary function and some illustrations of how they have been utilised in higher education.

Table 1 – Classification of Social Media Networks

Description	Examples	Use in Higher Education
General Networks		
Platforms that specialise in establishing wide-ranging personal relationships and sharing media content with users.	Facebook, LinkedIn, Mastodon and Threads	Students should use networking alongside alum groups and class discussions to enhance their job search efforts.
Media Sharing Platforms		
Visual -Sharing platforms specialise in delivering content that relies mainly on pictures.	Instagram, Snapchat	The Document showcases school life combined with educational information designs.
The video-sharing category consists of platforms that distribute video content through livestreaming features.	YouTube, TikTok, Vimeo, Twitch	Students can benefit from instructional video content, lecture live streams, and student project display functions.
Blogging and Publishing Platforms		
Social platforms that deliver brief messages for rapid interpersonal response fall under micro-blogging.	X (Twitter), Tumblr	Students benefit from exchanging research materials while receiving course information and communicating professionally.
Traditional Blogging provides websites that let users create and disseminate extensive textual content.	WordPress, Blogger	Course blogs, research journals, student portfolios
Social Blogging platforms combine features of both social networks with blogging capabilities.	Medium, Tumblr	Reflection essays, interdisciplinary discussions, creative writing projects
Community and Discussion Platforms		
Websites or sections known as forums serve discussion purposes and	Reddit, Quora	Subject-specific forums, Q&A for course topics, study groups

Description	Examples	Use in Higher Education
host end-user content creation.		
Q&A Platforms target their operations at answering and asking questions.	Stack Exchange, Yahoo! Answers	Academic help, research inquiries, technology troubleshooting
Messaging and Communication		
Instant Messaging - Tools primarily for direct and group messaging.	WhatsApp, Signal, Messenger, Telegram	Students can organise small study teams while maintaining project coordination through fast group interchanges.
Video Call Platforms - Focused on video communication.	Zoom, Skye, FaceTime	Virtual classes, office hours, guest lectures
Professional and Business Networks		
Networking - Platforms serve professional users to connect with others and exchange information.	LinkedIn, Xing	The platform offers professional development opportunities, networking options, internships, and future opportunities.
Collaboration and Workspace - Combines networking with tools for teamwork.	Slack, Microsoft Teams, Discord	Group projects, faculty collaboration, course management
Niche and Specialised Networks		
Homemade connections focus on romantic or social services serving the dating and relationships marketplace.	Tinder, Bumble	Sharing time with others is combined with networking activities, although these interactions lack academic purposes.
Hobby and Interest-Based - Tailored to specific interests or activities.	Strava (cycling/running), Ravelry (knitting)	Among the activities available are clubs, extracurricular participation and shared interest groups
Social Commerce and Reviews		
Shopping Platforms unite social qualities through their shopping solutions.	Pinterest (with Shop the Look), Instagram Shop	The university promotes its merchandise with art and design portfolio displays.
Review Platforms exist to provide evaluations of businesses and product and service reviews.	Rate My Professors, StudentRoom, Yelp, TripAdvisor	Students can access my reviews for coursework ratings and assessments of student-friendly restaurants and hotels in the area.
Content Discovery and Curation		
Bookmarking platforms enable users to save and find web content along with other platforms.	Pinterest, Pocket	The process of organising research materials also includes curating study resources.
News Aggregators offer custom platforms which assemble news content through specific interests.	Flipboard, Feedly	Students must maintain regular updates about their industry, academic articles, and industry news.
Augmented Reality (AR) and Virtual Reality (VR) Social Platforms		
VR Social Spaces - Virtual environments for social interaction.	VRChat, Facebook Horizon	Virtual campus tours, immersive learning experiences
AR Social Tools consists of mobile programs that integrate digital information into users' surroundings.	Snapchat Filters, Instagram AR Effects	Students can experience additionally enhanced college campuses through interactive educational software components.

Some websites may fall under multiple categories or change their purpose over time, but this classification offers a broad framework. Teachers can learn more about social media usage, even though the landscape changes. Although Facebook is the most popular social network site, it has been the research focus of JUTLP and other publications. The range of categories must be considered for teaching and learning growth options. Teachers now have opportunities to engage students in learning in various ways thanks to the widespread use of social networking, so-

cial media, and collaborative tools for sharing a virtual environment. The dissemination of new research and the development of practices among academics in higher education is centred on learning and teaching journals like the Journal of University Teaching and Learning Practice (JUTLP). To advance practice and bring about practice change in the industry globally, it is essential to provide practitioner guidance based on developing evidence in the form of high-quality, original research. Peer review and strict editorial practice guidelines ensure the calibre and usefulness of research published in journals, which are important mediums for dissemination [25, 33]. Social media use has been interwoven with our digital device-based social and professional communication during the past 20 years. There were 4.95 billion social media users worldwide as of October 2023, representing 61.4 % of the world's population [19]. Compared to the previous quarter, when there were an estimated 4.88 billion social media users, this represents an increase. These figures demonstrate the continued expansion of social media but do not necessarily indicate that the preferred platforms are the same. The openness of these interactions and communications has led to problems, even while using social media as a teaching and learning tool has provided an alternate way for students to interact and communicate with one another. Social media use in higher education is influenced by a variety of factors, including both facilitators and impediments. Authors [25]. Therefore, it is crucial to consider a critical analysis of their utilisation. Journal editors must demand critical responses from writers who post on social media for educational purposes.

Virtual Mentorship and Professional Networking. Social media also creates mentorship opportunities that do not need geographical distance. Experts can follow influencers, ask for comments, and communicate with mentors via LinkedIn, Twitter, and business Facebook pages [22]. Online mentorship resonates with Social Cognitive Career Theory (SCCT) [39], where career competencies are acquired through observational learning, self-efficacy, and social support. A practical application shows that LinkedIn mentorship schemes and business Slack networks have fostered professional development by expanding professional connections and knowledge exchange [21]. In addition, studies recognise the use of Twitter chats and LinkedIn groups as peer-to-peer learning and industry engagement drivers.

Social Media and Career Advancement. Career advancement also becomes more associated with social media usage. LinkedIn and GitHub are online portfolios where workers promote their skills and welcome career prospects [35]. The literature has reported that people who are more engaged in professional social media discussions have higher career mobility and job opportunities [46]. Employers use social media analytics to screen applicants' online profiles and professional reputations [69]. 87% of employers utilise LinkedIn for recruitment, so it is important to have an optimised online profile [9]. Despite its advantages, career development through social media entails pitfalls such as privacy issues, online reputation management, and algorithmic discrimination [63]. Excessive dependence on digital footprints in recruitment decisions is an ethical issue regarding data privacy and discrimination in the workplace.

Social media platform concept and peculiarities. The authors [45] claimed that it was Chris Shipley, a facilitator of the Guidewire Group and an emerging technological trends researcher, who first used the term social media. The definition of Internet technologies for enabling informative Internet-based communication, collaborative activities, and participatory interaction is currently in progress. Social media platforms display Internet-based advertisements that deliver basic information accessible to all regarding individual matters. Through social media, users achieve communication with their belonging community networks. New technology-based activities, telecommunications and social media relations, written speech, and visual and audio content fall within its scope. The information presentation process, alongside societal interaction, produces fresh viewpoints of communication that lead toward unified meaning systems between groups of people. The business world chose not to match the opportunities offered through social media platforms. Instead, it uses them to attract consumers to purchase their products and gain support. The interface function of social networks allows users to set up personalised web pages that enable users to view information about other users, chat with friends, and make safe contact with non-infringing people. The necessary function of social networks for users stems from their desire to maintain existing relationships rather than seek new ones [47]. Through social net-

works, users submit personal achievements, photos, thoughts, and other content [17]. Users must fashion their profile page before building their network of connections that form links with other members. The core characteristic of social networks stems from each user establishing his personalised website to centre on them at this online location.

Social networks and websites were the hub of human life. Platforms and networks are free participation that allows (communities) to become engaged and build genuine relationships. Social media networks such as Facebook, LinkedIn, Instagram, Twitter, and Xing are widely available. The greatest places to hunt for a job are Facebook, LinkedIn, and Xing because they have job-posting functions. Many other local websites are quite famous in the home country. According to [67], social network sites are web-based services that let users build a personal profile to communicate with contacts and see their friends' networks in the system. They allow people to build relationships online and share and trade data. They are integrated into their instruments to enhance the offline reality. The websites provide users with technical and social communication tools like wall posts, messages, comments, and personal data. Most social media platforms are focused on users, interests, and relationships, but they can also have various other goals. LinkedIn and Xing are focused on professional contacts; Instagram is focused on sharing audio and video, while Twitter is focused on posting status updates. For instance, when someone utilises Facebook to build a professional job and socialise with friends, formal and informal interactions are combined. According to [13], social networking sites allow users to create a public or semi-public profile on a particular site, connect with other users with accounts on the same site, and view each other's profiles. An investigation was conducted by [3] to ascertain how Bangladeshi job searchers use social networking sites and the number of people who use Facebook and LinkedIn to look for their ideal position. There were 200 participants in this study.

The study's findings verified that 92% of participants utilise social networking sites to look for work, with 84.2% using Facebook and 9.8% using LinkedIn. Human resource managers use these sites to learn more about the workforce; they can compare resumes, online profiles, and job seekers' online activities. After discovering some of the applicant's shared relationships,

managers ask for recommendations or comments on a certain person. Websites can also assist the business in keeping an eye on the conduct and morale of its current workforce. Maintaining a positive reputation is essential when a business is heavily involved in customer service. Any customer can visit an employee's page and reject the company's services because of inappropriate behaviour. For this reason, HR managers also monitor the employees' online posts and photos. The authors [69] state that LinkedIn is an online professional network website used to develop professional connections. It began gaining fame in 2003 and is now widely recognised globally by employees and employers. According to Statista.com, members' sizes on LinkedIn have been growing dynamically every year since 2009, and the number of website members will be 722 million by December 2020 (Figure 1).
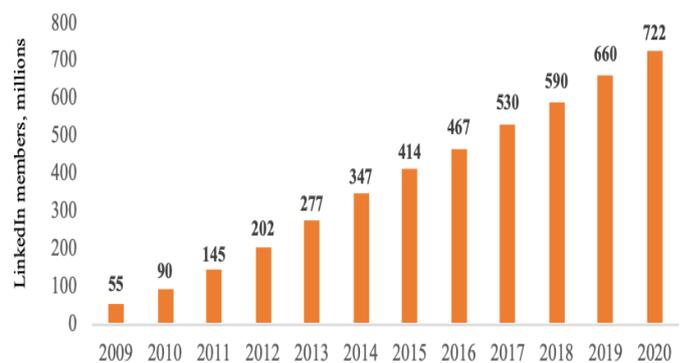

Figure 1 – Global LinkedIn membership numbers from 2009 to 2020

Facebook operates as the leading social network platform across the world. The worldwide Facebook user base surpassed 2.74 billion during Q3 2020 [58]. Justice Connect explains that Facebook enables registered users to link with their type, events, businesses, causes, non-profits and individual interest groups. Companies that need to recruit new staff members should consider Facebook because it connects them with a wide range of personnel worldwide. Twitter is a practical micro-blogging service that permits users to write short updates. The total number of Twitter users reached 340 million in 2020, placing Twitter at position 13 among the most popular social media platforms. The platform makes company image promotion possible and enables job posting through Facebook and Twitter while fulfilling job seekers' needs by organising desired organisations with less than one interface [36].

Benefits and drawbacks of job hunting through Social Media Peculiarities. People are used to using the Internet daily; this is especially true in Europe, where older people are becoming skilled in social media use in addition to young people. This is a very helpful feature for websites that combine companies and job searchers in one place using a large database. Different technologies allow people only to conduct targeted and tailored searches on their goals. Authors [51] emphasise that speed is one of the first advantages of using social media peculiarities (SMP) to get a job. Uploading your CV only takes a few minutes and requires less effort; the targeted search and keywords can save a lot of time than searching through hundreds of job openings in the newspaper or mailing resumes to various companies one at a time. Also, the reaction time and delivery might be instantaneous. Like speed, authors [10] claim that a deeper and larger pool of open positions makes SMP a superior option for job seekers. The presence of global corporations and the biggest market players on all SMPs does not restrict job seekers' options for securing a preferred job location.

Before SMP was in place globally, finding employment in a different country was rare. Still, SMP and globalisation have made it so much easier for a job applicant to send a CV or call an employer in a different part of the world and for an employer to screen an individual over the Internet without being physically there. It can motivate job applicants to develop their skills and competencies to go anywhere if they have proper knowledge and experience. Democratised information is also a huge benefit for SMP. Candidates can research the work environment and company reputation, forcing the employer to project a favourable image and promote the brand. The SMP democracy increases candidate equality by allowing employers to consider average specialists and those familiar with the company. Because of this, the employer's opportunity to get the most appropriate employee and the employee's opportunity to be employed rise. There are other ways for the job seeker to show and verify their skills [69]. The person can insert references and electronic certificates to verify some skills; e.g., on LinkedIn, there is a chance to verify the achievements on a person's page; former colleagues or customers can insert references and verify the skills. Many disadvantages exist, which are brought about by using SMP for job search [64]. Invasion of privacy can be the biggest dis-

advantage of SMP because the employers get an opportunity to read the information not contained in the job seeker's working life, which can hurt someone's image and lead one to miss getting hired. The private account must be thoroughly audited and maintained; the individual must always remain online, erasing the distinction between professional and personal life. Even when the majority of the multinational companies are on SMP, there is still a likelihood of public or local ones that one will never be able to view any vacancy on social media or even spot their profile. It is improving with each passing day, but to see all the chances, one must double-check and factor in job seeking through SMP and other resources. Another drawback is that job posture data can be combined with other types of data and news on social media, and it can easily get misplaced. On Twitter and Facebook, individuals track firms, different news sites, and friends; hence, the vacancy can become lost among other tweets. This choice can be reduced in Xing and LinkedIn, where there are options to receive notices regarding new job positions and reactions on the CV of the job applicant. The social media platform may not always indicate that there is a real human being (recruiter) behind the page. Therefore, scams are also feasible when searching for jobs through SMP. The imitators may demand sensitive personal details, which can be exploited. It is always better to call the company recruiter by telephone or other communication medium, check the offer's authenticity, and never give out personal information. In summary, the most used SMPs are LinkedIn, Facebook, Xing, and Twitter, which are used for job searching, and they are increasingly popular and can be used by job seekers. Despite major disadvantages, authors regard job search mainly through SMP as the most promising way of finding a new employer.

Continuous professional development and microlearning. Information availability, memorisation, sharing, and consumption have all been significantly altered by technology. In 2021, there were 6.378 billion smartphone users globally, according to Statista's website [58]. At the same time, 3.78 billion people used social media in 2021 [58]. There are presently 7.7 billion people on the planet [61]. These figures suggest that, on average, 82% of people worldwide own a smartphone, and 59% of them routinely and actively browse social media websites. Consequently, social media and smartphones are integral to

many students' everyday lives [24]. Two fundamental learning environments transform through modern technology since it affects both formal learning settings and workplace-based education. Technological improvements during the present age have made access to learning materials along with enhanced connectivity possible. Massive Open Online Courses (MOOCs) serve as one teaching method among a greater collection, including self-paced learning with flipped classrooms and gamification, as well as just-in-time learning and blended learning, according to [62]. When personalised learning combines real-time online delivery with mobile learning through e-learning, it becomes an effective solution that improves academic outcomes while enhancing student dedication, satisfaction rates, and confidence [31, 57]. Studies devoted to micro-learning expanded considerably since the year 2010 [40]. These authors position micro-learning research as a key investigation topic between e-learning and mobile learning regions. So, what exactly is microlearning? Micro-learning first appeared in 2002, according to [28]. The term microlearning has multiple conceptual and visional frameworks [27]. This author explains how time, content, curriculum, form, process, modality and learning type function as the fundamental elements of microlearning. According to [28], learning exists across small isolated components at the micro level and larger middle-level and largest-scale organisational structures at the macro level. Experts indicate that micro-learning applies to learning types through their microscopic elements. Learning objects represent a component of the course structure at its micro-level, according to [28]. Literature depicts micro-learning through descriptions of small and bite-sized student learning materials. The scheduling for a micro-learning educational segment should be between 30 seconds and five minutes [31]. Studies [49] show that learning videos exceeding nine minutes tend to make students lose focus, while each lesson should not exceed fifteen minutes. Authors [60] explain in their book that time guidelines serve as instructional direction when implementing micro-learning content. The authors state that micro-learning refers to brief learning materials which serve educational purposes and meet the needs of students. Authors [60] explain that any learning material qualifies as micro-learning if it requires less than 10 minutes of consumption. Courses consisting of videos, texts, micro-

podcasts, blog posts, wikis, and brief messages through social networks represent suitable online lesson options [49, 55]. Combining micro-learning with social media for education helps students learn better while maintaining their ongoing involvement with course material and enhancing their ability to remember what they learn. Multiple deliveries of microlearning content enable student retention growth, according to [56]. Micro-learning supports student learning through educational implementations incorporating neurological research methods for storing and retrieving information [21]. The research [29] suggests that adding micro-learning modules to surgery clerkships can benefit student learning outcomes. The literature presents various discussions about the educational applications of social media and its associated benefits. Social media platforms positively affect student performance in educational settings, and researchers agree on their safe application in medical education [16]. Education through social media platforms enables better communication connections between students and educators [52]. Social media serves as a platform that enhances student engagement and team collaboration. Online digital platforms deliver meaningful benefits of engagement and motivation alongside interactivity and soft skills development and improved communication and collaboration opportunities to learners when teachers implement them creatively in educational settings [38]. Students can share educational information on social media to facilitate their learning process. Students use social media as a communication tool to share resources and study materials in real-time.

Virtual Mentorship and Knowledge Sharing. Social media facilitates mentorship opportunities beyond geographic limitations. Professionals use LinkedIn, which is combined with Twitter and professional Facebook groups, to benefit from mentorship relationships. Career growth becomes quicker through social media because experienced professionals deliver guidance, which includes information about modern industry developments. Research laboratories experience substantial negative effects from social distancing protocols because they restrict direct laboratory interactions. Traditional mentor-mentee interactions between trainees, mentors, and staff members are restructured because of limited face-to-face contact (Figure 2), so mentorship now uses virtual platforms. Most trainees and

mentors have no experience mentoring through virtual-based platforms. The effects on trainee development alongside mentor productivity become substantial whenever this discomforting mentor-mentee connection fails to receive proper attention.

mation to build confidence alongside cultural competencies. Through virtual mentoring initiatives in the COVID-19 pandemic, new strong relationships have developed between mentors and trainees who can enhance their professional and scientific abilities.
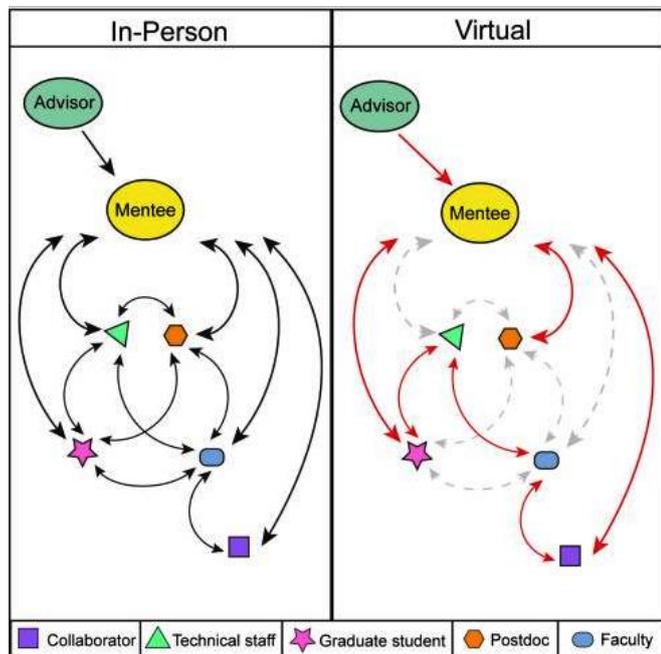

Figure 2 – Virtual and In-Person Mentoring Networks

Platform	Type	Virtual Mentoring Features
Zoom	Audio and video call application	Waiting room feature, calendar integration, multi-screen share, free basic interface, chat feature
Skype	Audio and video call application	Messaging, screen sharing, recording capabilities, can call phones, free basic interface
Trello	Project management tool	Free for basic service, simple sharing of tasks including calendar and deadlines
Slack	Collaboration software	Organized chat conversations by topics, team members can share files, face-to-face or chat option
BlueJeans	Video conferencing application	Audio or video conferencing option, scheduling and productivity tools
Twitter	Social media platform	Tweets threading for themed information sharing, mentorship extended to broad group of followers, direct messaging option
Facebook	Social media platform	Information sharing, direct messaging option, option to join mentoring groups
WeChat	Messaging app	Overseas favorite
WhatsApp	Messaging app	End-to-end encryption
QQ	Messaging app	Most popular video/chatting app in China, connects internationally, and has both phone and computer interfaces
LINE	Messaging app	Video and text messaging, games, voice calls
KAIKO talk	Messaging app	Video and text messaging, send files, remote log out for PC version, voice calls, calendar

Figure 3 – Virtual mentoring platforms

This work presents specific methods for keeping up virtual mentorship, which helps maintain drive, team unity, and scholarly output through industry and educational sector illustrations. Virtual mentoring offers mentors intentional, time-bound assistance sessions that may be accessed through digital platforms to facilitate training improvement and career development during these trying times. Visual representation shows how different in-person and virtual mentoring relationships generate the mentoring interaction. The virtual mentoring platform allows trainees to maintain effective learning environments even though it permits fewer interactions between trainees and mentors. The figure displays physical meetings using black lines, while virtual connections appear in red, and missed contacts have grey dotted lines.

What is virtual mentoring? Virtual mentoring allows information exchange using multiple digital communication platforms (Figure 3). Figure compiling virtual mentoring platforms based on application type and features. Virtual mentoring platforms empower success goals by developing skills while letting mentees learn new infor-

Online mentoring systems provide multiple advantages to their users. The unique combination of advantages and challenges in virtual mentoring enhances or creates obstacles for mentorship activities. Professors and lab officers commonly refrain from asking questions when participating in laboratory events or classes because they lack confidence in their understanding of the subject matter. The concern of disturbing your mentor prevents you from seeking assistance on your chosen topic. Virtual mentoring allows mentors to guide trainees in developing new research directions from digital resources. The screen-sharing feature gives mentors an exceptional way to present mentoring education to mentees by demonstrating computational biology techniques, statistical methods, and bioinformatics through direct scientific mentorship interactions. The use of virtual sessions for mentoring creates favourable learning circumstances due to shifts in participants from physical space to audiovisual elements, which reduce judgmental conduct.

Gap-in literature. A research gap exists in this research paper regarding obscure aspects of how social media impacts workforce upskilling processes. The literature presents plenty of studies on professional networking capabilities and career advancement through social media platforms but fails to address social media upskilling effectiveness and its constraints. Research has insufficiently examined four critical problems, including concerns about content trustworthiness and the absence of formal accreditation with overwhelming amounts of information and digital distractive elements. Insufficient research explains how social media platforms affect workplace ability, skill development, and career transitions between jobs. The empirical study should determine how social media upskills the workforce by examining these factors to build a full picture of this workforce development tool. The document requests additional studies about actual professional development effects from these platforms and reports missing studies examining the consistency and quality of digital learning outcomes. Further investigations need attention because different socioeconomic groups face obstacles when accessing digital resources as part of the digital divide challenge.

According to [39], the Social Cognitive professional Theory (SCCT) examines how behavioural activities contribute to professional advancement while individual qualities interact with contextual factors. The Social Cognitive Theory that [8] established develops through SCCT, showing people learn abilities from observing others and through personal experiences and community activities. Workplace professionals should grasp how SCCT operates in digital environments because it helps understand their platform abilities for learning and connecting to advance their careers. Because of the psychological connections between self-efficacy, result expectations, personal goals, digital learning, and professional growth, researchers can use SCCT to study how social media impacts workforce upskilling. People who view social media as a valid educational source establish it as an effective learning tool which guides them into digital education participation and professional networking and enables them to explore potential careers through social media. When professionals interact on social media, they develop inner confidence to acquire new skills since they access social platforms like LinkedIn Learning and Coursera and industrial webinar content. Social media enables networking activities because users experience positive outcome expectations from obtaining jobs, accessing mentors, and receiving professional recognition through direct connections within professional communities and content platforms. People establish different goals determining their social media practices for profile creation and engagement with leadership opportunities and job searching activities. According to SCCT, there is an ongoing interaction because students maintain continuous access to digital learning and networking opportunities that boost their self-efficacy, restructure their performance, and advance their professional objectives. Social Cognitive Career Theory provides this study with tools to investigate workforce upskilling through social media by examining the advantages and obstacles that affect digital learning, career networking, and professional development.

The SCCT Model of Upskilling on Social Media. The following schematic illustrates how SCCT applies to workforce upskilling through social media by integrating actual digital learning and networking platforms:

Background influences		
Self-Sufficiency	Outcome Expectations	Personal Goals
Confidence in	Expected Benefits	Career Aspirations
Learning through	Job Prospects, Mentorship	Branding, Thought Leadership
Social Media Engagement		
Digital Learning (LinkedIn Learning, Coursera, youtube)		
Networking (LinkedIn, Twitter, Industry forums)		
Career Advancement (Personal Branding, Digital Presence)		

Figure 4 − Application of SCCT to Social Media and Workforce Upskilling

Enhanced Empirical Support and Industry-Specific Applications. Integrating recent empirical studies into SCCT analysis enhances its alignment with social media-driven workforce upskilling. Research [46] indicates that 87% of recruiters rely on LinkedIn to evaluate candidates' digital skills and professional credibility, aligning with the SCCT theory that outcome expectations determine social media networking participation. Au-

thors [35] demonstrate that tech industry experts exhibit a 70% higher tendency to utilise GitHub and LinkedIn Learning for autonomous skill enhancement than healthcare professionals who depend on digital mentorship platforms such as Doximity. Professionals in finance experience enhanced self-efficacy for promotion attainment through digital certifications from Coursera and CFA Institute platforms. The role of SCCT emerges as a vital explanatory framework through which professionals across various industries demonstrate their use of social media platforms to enhance skill sets, broaden professional networks, and attain career advancement. SCCT offers an intricate theoretical structure to analyse how social media platforms enable workforce skill enhancement. SCCT examines how career goals, outcome expectations, and self-efficacy map onto e-learning, networking, and career development to explain the psychological and behavioural reasons for professionals' intention to use internet-based systems to advance their careers. Empirical studies and sector-specific applications guarantee theoretical alignment with actual social media engagement practices. The evolution of digital transformation makes SCCT's role in examining technology-driven career development increasingly vital.

The evolution of social media platforms has altered workforce upskilling, networking, and career progression by delivering accessible educational materials while supporting international professional connections and personal branding opportunities. Effective navigation of challenges, including information overload, privacy concerns, and the digital divide, remains essential. The theoretical foundation of SCCT provides insight into how social media influences professional growth. The evolution of digital platforms will make their contribution to workforce development more critical, which calls for additional research into their potential long-term effects.

METHODOLOGY

The chapter discusses the study design, data collecting, and data analysis while providing a broad overview of the research methodology used in the study. The quantitative technique is used since the study examines how social media affects workforce upskilling through networking, learning, and career advancement. This approach provides the framework for statistical analysis of secondary source data to establish a connection between social media use and workforce upskilling.

A research design or strategy is a plan to answer questions. The author [44] defines a research design as a framework that includes the procedures and processes to collect, analyse, and interpret information. In other words, the research design outlines how the researcher will study the central problem of the research and is, therefore, part of the research proposal. The author [54] defines a research design as a plan that aims to provide an answer to a specific research question. The definition of research design is analogous to good research data management and consists of many components, approaches, and strategies for data gathering and analysis. Research design determines the data that must be collected and, consequently, the findings. Variables, hypotheses, experiments, techniques, and statistical analysis are all determined by the type of research design, which we will discuss in more detail below [18]. However, in terms of study technique, what is research design? Research design and technique are sometimes confused. The exception is that the latter outlines how to implement the design, whereas the former provides a blueprint for addressing the problem. When creating a thesis statement, both are crucial. A comprehensive research design's goal includes making the data as clear, accurate, and objective as possible to solve the study problem, which is the sole goal of excellent research design. Successfully specifying the kinds of findings to test for a hypothesis, assess, or characterise a phenomenon is necessary to achieve the outcomes. If this isn't done before analysing the data, the analysis will be flimsy and weak and probably not address the issue the researcher is attempting to address. Since everything subsequently stems from the chosen design and since this pick is most similar to the theorist's thoughts and research objectives, design is fundamental to any research activity [65]. When the conclusion is found to have some degree of objectivity, the study design has served its aim through appropriate selection. A minimally error-prone study design is one of its objectives. To that end, sound research design possesses these fundamental tenets: Determine the problem, Describe the reasons why it is a problem, provide literature on the problem should be reviewed, Hypotheses on the problem should be developed, Outline the data on which to test the hypotheses and how it is to be obtained. And lastly, define how the in-

formation will be interpreted and analysed to establish whether the hypotheses are true or false.

Basic Research Design Methods. Research techniques are employed to address several problems, and research question samples can be used to determine which techniques are most suited. To "frame" the overall study, these rely heavily on the research design used. Because they are so closely related, research methodologies and design are sometimes misunderstood, although there is a minor difference. A clear distinction between the two is provided by [66]: method is practical, whereas design is logical. In other words, the technique refers to how that plan is carried out, while the design is the plan itself. When developing a study technique, several crucial factors must be considered. Three of these are reliability, ethics, and data validity. It's also wise to consider how much time is spent collecting and processing data. The study methodology will also be important; for example, while observation or interviews can produce extremely comprehensive data sets, they take much more time than surveys. Therefore, while creating a study design, it will be crucial to weigh these demands against the available time and resources and the benefits and drawbacks of each approach.

Types of Research Methods. Research technique methods [4] offer eight different types of study designs; however, additional specialised ones will be required for other disciplines. This being said, the study's goal will have the biggest impact on the kind of approach used. For instance, the subject or issues, such as what motivates consumers to purchase luxury designer apparel rather than its less costly alternatives, will dictate this in the social sciences. However, any subject or area of knowledge can benefit from the following techniques: Surveys, interviews, questionnaires, case studies, experiments, and observational trials (including those with retrospective and longitudinal designs). Delphi is a method where panellists exchange opinions on unresolved topics over multiple rounds to predict a hypothesis, particularly in fields where knowledge is lacking and ambiguous [2]. It should be noted that the research need not be forced into a particular kind of methodology. Depending on the resources and research plan, the research team can use various methodologies to uncover the required data. Furthermore, the quantity and quality of the data produced by one approach will vary substantially from that of another.

Types of Research Designs. One of the main factors influencing a finding's quality, applicability, and validity is the kind of research design used. It is usually advisable to identify the type of research by incorporating it into the research design before starting the proposal process. Although several study design patterns have been used, the literature hasn't always taken a strong stance on them [1]. Given that some of the earliest sources discussed fixed and flexible designs, certain authors have made it impossible to discern between types, methods, and approaches [12]. We have narrowed down the variety of study designs to four primary categories listed below to make the process as simple as possible.

Descriptive Research. When researchers use a descriptive research design, they attempt to characterise an instance, circumstance, or occurrence. How, what, when, and where are the questions it seeks to address as a theory-based design, but not why. Before asking why the problem occurs in the first place, descriptive research advises the researcher to learn more about the problem itself. A descriptive design allows the researcher to learn more about the issue.

Additionally, it helps the research team visualise why the study is necessary. Exploratory research, which is presumed to be the initial stage of the study, according to [11], may be required if it is not so evident or critical. Building on the foundation laid by exploration, descriptive research seeks to advance, complete, or improve the information already available. One distinctive feature of descriptive research is its pursuit of gathering as much data and information as possible.

Experimental Research. The research aims to establish cause-and-effect in a condition or event through an experiment. This causal research design aims to see how one variable affects a dependent variable. By using experimental models, the researcher aims to ascertain or forecast what will transpire [5]. In the example, an investor changes one variable and observes the impact on other aspects, such as price, as part of an experimental study. Experimental studies are a proactive strategy since they enable one to identify what is and is not working as they proceed and to modify the differences to address the research question. The social sciences and the medical field frequently use experiments to classify people, such as using a control group as an independent measure.

The goal of correlational research is to establish a relationship between two variables, just like experimental research. Correlational research aims to find similarities and associations between variables, whereas experimental research tracks changes between variables (causal). That is the main distinction [53].

Explanatory research, as the name suggests, aims to make sense of the researcher's conclusions and ideas to develop the theory. To provide the reader with the findings that address the main study thesis's what, how, and why, researchers using this kind of research design attempt to identify the boundaries and scope of a topic. The researcher should set aside personal biases and make room for fresh information and/or discoveries while performing the study. Academics and students use explanatory research to identify the underlying cause of an issue or a novel feature of an issue. These don't always have to be clear when the study was first proposed or thoroughly investigated beforehand [26] – getting down to the research work's context. It is important to remember that this argument employs a quantitative perspective. This approach is most appropriate for a study objective where a statistical discovery is linked to actionable intelligence. By definition, the quantitative approach uses numbers to represent data. Given the objective nature of numbers, quantitative methods are necessary, for instance, when making commercial decisions based on data when profit margins rely on even the smallest details and/or statistics. It is typically regarded as a "top-down" method [14]. It entails separating the generic from the specific. By doing this, the researchers draw a conclusion from the premises or information provided. Statistical software and other services are used to process quantitative data because it also happens to be of a huge volume. The study uses a descriptive and correlational approach, a quantitative research strategy. By using statistical analysis to look at trends and associations, the approach is appropriate for determining the degree to which social media influences workforce upskilling. Numerical data from previous studies, industry reports, and institutional publications are gathered and analysed using a secondary data-based approach.

Research Approach. A secondary research method is employed, which involves collecting accessible quantitative data from scholarly literature, policy reports, industry white papers, and reports from reputable sources. This approach enables systematic and comprehensive analysis without interacting with primary respondents. The research critically synthesises data from various perspectives to provide a balanced discussion on workforce upskilling through social media.

Data Collection Methods. The study is drawn solely from secondary sources, such as comprehensive research gate pdf materials, scholarly journals, government and institution reports, and publications by institutions like LinkedIn, PwC, McKinsey, and the World Economic Forum. Such sources provide current data on trends in professional development, digital learning, and career advancement using social media. The data that has been selected is critically evaluated on credibility, relevance, and date to provide a platform for analysis.

Data Analysis Techniques. Secondary data gathered is processed using SPSS to produce valid conclusions. Key findings from previous studies are summarised using descriptive statistics such as mean, standard deviation, and frequency distribution. Multiple regression analysis is employed to assess the degree to which social media influences professional development, and correlation analysis is utilised to identify relationships between workforce upskilling and social media use. A methodical and fact-based approach to understanding how social media affects learning, networking, and professional growth is offered by the statistical techniques employed.

Ethical Considerations. As this study is conducted using secondary data, ethical issues concern accurate citation, information accuracy, and authenticity of sources. Accurately citing all sources maintains academic honesty, and caution is exercised to present information objectively without distortion. Data privacy and compliance with research ethics are strictly adhered to to maintain transparency and reliability of the conclusions drawn in the study.

This subsection describes the quantitative research design, methods for gathering secondary information, and statistical analysis techniques using SPSS. The research is intended to provide a systematic framework for analysing the impact of online platforms on workforce upskilling while ensuring ethical considerations and acknowledging its limitations. The results and discussion based on the data examined are presented in the next chapter.

RESULTS AND DISCUSSION

This chapter will provide comprehensive details on the analysis and the conclusions drawn from the data analysis. For ease of identification, tables will be created with the keywords used, their frequency of occurrence, word score, author, and findings. To determine the relationship and the impact of social media on workforce upskilling, this chapter will employ multiple linear regression analysis and Pearson correlation.

Table 2 – Content Analysis

Sources	Keywords	Search found	Search screened	Search utilised	Author	Findings
Google Scholar	Workforce	2	2	1	[50]	According to recent policy talks, workforce development and higher education infrastructure could facilitate workers' integration into these developments.
Google Scholar	Upskilling	43	10	2	[42]	Due to global trade and outsourcing dominating the modern economy, the demand for upskilling and reskilling is a global issue.
					[29]	Indeed, by relying on scalable reskilling and upskilling, individuals can be well-equipped to get involved in economic development, decreasing inequality and leading to better social stability.
Google Scholar	Influence	3	3	2	[67]	About 50% of the samples surveyed were found to have high engagement with social media. However, these activities had a positive influence on their career advancement.
Google Scholar	Social media	63	15	2	[67]	Some of the barriers pointed out in the study were functional barriers, such as a perceived lack of skill or time or not maintaining interest in utilising social media for work purposes.
					[68]	Social techno graphics served as a market research tool that classified social media users based on their level of involvement, and companies utilise such to set up their social media agencies.

Table 2 shows a conceptual analysis of keywords extracted from secondary sources. The data collection procedure is detailed in the above table. This study used a variety of secondary data sources, such as corporate reports and peer-reviewed papers from Google Scholar. When sorting and filtering searched articles, the keywords in the above table served as the inclusion criteria.

Table 3 shows the descriptive statistics of the three variables: word score, word frequency, and word interpretation.

Table 3 – Descriptive statistics

	Mean	Std. Deviation
Word Frequency	27.75	30.281
Word interpretation	5.25	4.031
Word score	1.75	0.500

The word frequency yielded a mean of 27.75 standard deviation. The obtained deviation was 30.281. The standard deviation was 5.25, while the mean for word interpretation was 5.25. The recorded deviation was 4.031. The standard de-

viation was 1.75, whereas the mean of the word score was 1.75. The obtained deviation was 0.50.

Table 4 shows the Pearson correlation between word frequency, interpretation, and score.

Table 4 – Correlation

		Word Frequency	Word interpretation	Word score
Pearson correlation (r)	Word Frequency	1.00	0.981	0.567
	Word Interpretation	0.981	1.00	0.703
	Word Score	0.567	0.703	1.000
Sig	Word Frequency		0.009	0.217
	Word Interpretation	0.009	0.149	0.149
	Word Score	0.217		
N	Word Frequency	4	4	4
	Word Interpretation	4	4	4
	Word Score	4	4	4

The table shows a correlation between word frequency and interpretation, with the greatest correlation of 0.981. The number shown in the above table indicated a statistically significant relationship between word frequency and word interpretation, with a value of 0.009. Word interpretation and frequency were shown to have a statistically significant Pearson connection. Social media also significantly impacts worker upskilling.

Table 5 shows that although the R-value in the model table is equal to the Pearson correlation of 0.981, the R^2, sometimes referred to as the coefficient of determination, indicates the extent to which the variable in question accounts for variation.

Table 5 – Model Summary

Model	R	R^2	Adjusted R	Std. Error of the Estimate
1	.981a	.962	.944	7.189

Notes: Predictors (Constant) word frequency

Word frequency is a good indicator of how much social media influences workforce upskilling, as .962 is equal to 96.2%.

Table 6 shows the ANOVA between the multiple regression on the influence of social media on workforce upskilling. Here, the Anova table provides more detailed information than the descriptive analysis's mean and standard deviation alone.

Table 6 – ANOVA

Model	Sum of squares	Df	Mean Square	F	Sig
Regression	2647.396	1	2647.396	51.230	0.019b
Residual	103.354	2	51.677		
Total	2750.750	3			

Notes: Dependent variable: word interpretation; Predictors (constant) word frequency.

There appears to be a correlation between the chosen terms, as indicated by the table's F-value of 51.230. Although the significant threshold of 0.019 guarantees that the association is statistically significant, it also suggests a significant relationship between word frequency and interpretation.

Authors [3] indicate that almost 92% of participants use social media to look for work on networking websites, with Facebook scoring 84.2% and LinkedIn scoring 9.8%. Nonetheless, the study showed that 50% of the surveyed participants had high social media engagement. Still, these activities had a beneficial impact on improving their careers. The results [3] about using social media for job searching agreed with these findings.

The presence of a positive association between word frequency and word interpretation is indicated by the Pearson correlation (r) of 0.009. Nonetheless, it can be concluded from this correlation that social media impacts worker upskilling. The term used in this study was a great predictor of the degree of social media influence on workforce upskilling, according to the R^2 value of 96.2%. However, this study suggests that a

perceived lack of time, expertise, or interest in using social media for work was a functional barrier.

Additionally, the results of this study indicate that people can be well-prepared to participate in economic development by depending on scalable reskilling and upskilling, which will reduce inequality and improve social stability. This supports the findings of [34], who found that LinkedIn Learning, Coursera, and Udemy have emerged as premier platforms for working individuals to pursue self-directed learning to advance their vocational abilities.

CONCLUSIONS

The last chapter integrates research conclusions and applied recommendations regarding social media use for workforce upskilling. It evaluates the research questions from Chapter One by interpreting the data analytical results in Chapter Four. The analysis proves that social media substantially influences workforce development through network-based and learning platform integration.

This research establishes that workforce upskilling functions through social media platforms because these platforms enable professional networking and digital learning opportunities that lead to career development. The statistical outcomes establish a robust link between social media use and skill development because platforms, including LinkedIn Learning and Coursera, reach their full potential on Twitter for career progression. Social media gives professionals valuable learning opportunities and career advancement benefits despite information disarray and formal certification issues.

Professionals and businesses should strategically implement social media in their workforce development programs. Organisations should support employee professional network usage and maintain investments in micro-learning platforms that improve employee development skills. Social media-based learning resources must receive equal access from policymakers while promoting digital skills to close opportunity gaps between communities. Schools should increase their social media adoption for both informal educational activities and student mentoring so students can develop employability capabilities.

The research depended on secondary data from which researchers might encounter accuracy and bias issues. This research exclusively explores social media effects on workforce upskilling, although it ignores other variables that enhance employee development. SPSS statistical analysis requires constrained application because the obtained data limits researchers from establishing causations between elements. New research should implement primary data collection methods to fill the existing gaps.

Social media is an effective tool for workforce upskilling, substantially affecting career development and professional learning advancement. Digital platforms allow ongoing educational opportunities along with professional networking and professional development that lead to the enhanced success of modern working professionals. To fully harness the potential of social media in workforce development, it is essential to resolve three core issues: information saturation, the absence of accredited standards, and digital inequality. People and organisations can meet digital economy requirements through well-planned social media implementation. Future studies need to study the permanent effects of social media on professional progress and how digital learning methods are changing.

REFERENCES

1. Abutabenjeh, S., & Jaradat, R. (2018). Clarification of Research Design, Research Methods, and Research Methodology. *Teaching Public Administration, 36*(3), 237–258. doi: 10.1177/0144739418775787

2. Aichholzer, G. (2009). The Delphi method: eliciting experts' knowledge in technology foresight. In *Palgrave Macmillan UK eBooks* (pp. 252–274). doi: 10.1057/9780230244276_13

3. Al-Amin, M., Nafi, S., & Amin, M. A. (2019). Use of social media for job search and application: a perspective from the job seekers in Bangladesh. *Discovery, 55*(281).

4. Alzheimer Europe (2009). *Understanding dementia research*. Retrieved from https://www.alzheimer-europe.org/research/understanding-dementia-research?language_content_entity=en

5. Anastas, J. W. (2000). Research design for social work and the human services. In *Columbia University Press eBooks*. doi: 10.7312/anas11890

6. Atzori, L., Iera, A., & Morabito, G. (2014). From "smart objects" to "social objects": The next evolutionary step of the Internet of things. *IEEE Communications Magazine, 52*(1), 97–105. doi: 10.1109/mcom.2014.6710070

7. Atzori, L., Iera, A., Morabito, G., & Nitti, M. (2012). The Social Internet of Things (SIoT) – When social networks meet the Internet of Things: Concept, architecture and network characterisation. *Computer Networks, 56*(16), 3594–3608. doi: 10.1016/j.comnet.2012.07.010

8. Bandura, A. (1986). *Social Foundation of Thought and Action: A Social Cognitive Theory*. Englewood Cliffs: Prentice-Hall, Inc.

9. Benson, V., Morgan, S., & Filippaios, F. (2013). Social career management: Social media and employability skills gap*. Computers in Human Behavior, 30*, 519–525. doi: 10.1016/j.chb.2013.06.015

10. Bhupendra, S. H., & Gairola, S. (2015). Importance Of Social Networking Sites In E-Recruitment. *International Journal of Technology Enhancements and Emerging Engineering Research, 3*(7), 91–95.

11. Blaikie, N. (2009). *Designing Social Research: The Logic of Anticipation* (2nd Ed). Polity.

12. Bouma, G. D. (1994). Book Reviews: Real World Research: A Resource For Social Scientists And Practitioner-Researchers. *Journal of Sociology, 30*(3), 344–345. doi: 10.1177/144078339403000311

13. Boyd, D. M., & Ellison, N. B. (2007). Social network Sites: definition, history, and scholarship. *Journal of Computer-Mediated Communication, 13*(1), 210–230. doi: 10.1111/j.1083-6101.2007.00393.x

14. Burney, S., & Saleem, H. (2008). Inductive and Deductive Research Approach. University of Karachi.

15. Chang, T., & Hsiao, W. (2013). Time spent on social networking sites: understanding user behaviour and social capital*. Systems Research and Behavioral Science, 31*(1), 102–114. doi: 10.1002/sres.2169

16. Cheston, C. C., Flickinger, T. E., & Chisolm, M. S. (2013). Social media use in medical education. *Academic Medicine, 88*(6), 893–901. doi: 10.1097/acm.0b013e31828ffc23

17. Constantinides, E., Romero, C. L., & Boria, M. A. G. (2008). Social media: a new frontier for retailers? In *European retail research* (pp. 1–28). doi: 10.1007/978-3-8349-8099-1_1

18. Creswell, J. W., & Creswell, J. D. (2018). Research Design: Qualitative, Quantitative, and Mixed Methods Approaches (5th ed.). Los Angeles: Sage.

19. DataReportal. (2023). *Global social media statistics*. Retrieved from https://datareportal.com/social-media-users

20. Da Xu, L., He, W., & Li, S. (2014). Internet of Things in Industries: A survey. *IEEE Transactions on Industrial Informatics, 10*(4), 2233–2243. doi: 10.1109/tii.2014.2300753

21. De Gagne, J. C., Park, H. K., Hall, K., Woodward, A., Yamane, S., & Kim, S. S. (2019). Microlearning in Health Professions Education: Scoping Review. *JMIR Medical Education, 5*(2), e13997. doi: 10.2196/13997

22. Dennen, V. P., & Burner, K. J. (2007). The cognitive apprenticeship model in educational practice. Retrieved from https://www.researchgate.net/publication/312341574_The_cognitive_apprenticeship_model_in_educational_practice

23. Donelan, H. (2015). Social media for professional development and networking opportunities in academia. *Journal of Further and Higher Education, 40*(5), 706–729. doi: 10.1080/0309877x.2015.1014321

24. Downes, S. (2005). E-learning 2.0. *eLearn, 2005*(10), 1. doi: 10.1145/1104966.1104968

25. Gonzalez, P., Wilson, G., & Purvis, A. (2022). Peer review in academic publishing: Challenges in achieving the gold standard. *Journal of University Teaching and Learning Practice, 19*(5). doi: 10.53761/1.19.5.1

26. GradesFixer. (2019). *Research Methodology: Exploratory, Descriptive and Explanatory*. Retrieved from https://gradesfixer.com/free-essay-examples/research-methodology-exploratory-descriptive-and-explanatory/

27. Hug, T. (2006). Microlearning: A New Pedagogical Challenge (Introductory Note). In T. Hug, M. Lindner, & P. A. Bruck, *Microlearning: Emerging Concepts, Practices and Technologies After E-Learning: Proceedings of Microlearning Conference 2005: Learning & Working in New Media* (pp. 8-11). Innsbruck: Innsbruck University Press.

28. Hug, T., & Friesen, N. (2009). Outline of a Microlearning Agenda. *eLearning Papers.*

29. Ichiuji, B. A., DeAngelis, E. J., Corpodean, F., Thompson, J., Arsenault, L., Amdur, R. L., Vaziri, K., Lee, J., & Jackson, H. T. (2021). The effect of a microlearning module on knowledge acquisition in Surgery clerkship students. *Journal of Surgical Education, 79*(2), 409–416. doi: 10.1016/j.jsurg.2021.11.001

30. Jackson, A., Yates, J., & Orlikowski, W. (2007). Corporate Blogging: Building community through persistent digital talk. *Conference: 40th Hawaii International International Conference on Systems Science (HICSS-40 2007), CD-ROM/Abstracts Proceedings*, 3-6, 80. doi: 10.1109/hicss.2007.155

31. Jahnke, I., Lee, Y., Pham, M., He, H., & Austin, L. (2019). Unpacking the inherent design principles of mobile microlearning. *Technology Knowledge and Learning, 25*(3), 585–619. doi: 10.1007/s10758-019-09413-w

32. John, P., & Wheeler, S. (2015). *The Digital Classroom. Harnessing Technology for the Future of Learning and Teaching*. Routledge.

33. Johnson, J. L., Adkins, D., & Chauvin, S. (2020). A review of the quality Indicators of rigour in Qualitative research. *American Journal of Pharmaceutical Education, 84*(1), 7120. doi: 10.5688/ajpe7120

34. Kaplan, A. M., & Haenlein, M. (2009). Users of the world, unite! The challenges and opportunities of Social Media. *Business Horizons, 53*(1), 59–68. doi: 10.1016/j.bushor.2009.09.003

35. Kaplan, A. M. (2015). Social media, the digital revolution, and the business of media. The *International Journal on Media Management, 17*(4), 197–199. doi: 10.1080/14241277.2015.1120014

36. Koch, T., Gerber, C., & De Klerk, J. J. (2018). The impact of social media on recruitment: Are you LinkedIn? *SA Journal of Human Resource Management, 16*. doi: 10.4102/sajhrm.v16i0.861

37. Laguna-Muggenburg, E., Bhole, M., & Meaney, M. (2021). Understanding Factors that Influence Upskilling. *arXiv (Cornell University).* doi: 10.48550/arxiv.2103.12193

38. Lampropoulos, G., Siakas, K., Makkonen, P., & Siakas, E. (2021). A 10-year longitudinal study of social media use in education. *International Journal of Technology in Education,* 373–398. doi: 10.46328/ijte.123

39. Lent, R. W., Brown, S. D., & Hackett, G. (1994). Toward a unifying social cognitive theory of career and academic interest, choice, and performance. *Journal of Vocational Behavior, 45*(1), 79–122. doi: 10.1006/jvbe.1994.1027

40. Leong, K., Sung, A., Au, D., & Blanchard, C. (2020). A review of the trend of microlearning. *Journal of Work-Applied Management, 13*(1), 88–102. doi: 10.1108/jwam-10-2020-0044

41. Li, L. (2022). Reskilling and upskilling the future-ready workforce for Industry 4.0 and beyond. *Information Systems Frontiers, 26*(5), 1697–1712. doi: 10.1007/s10796-022-10308-y

42. Li, L., & Lu, Y. (2021). Status, Opportunities, and Barriers in Implementing Industry 4.0 in the US. In J. M. Muller, N. Kazantsev, *Industry 4.0 in SMEs Across the Globe.* Boca Raton: CRC Press.

43. McAfee, A. P. (2006). Enterprise 2.0: the dawn of emergent collaboration. *IEEE Engineering Management Review, 34*(3), 38. doi: 10.1109/emr.2006.261380

44. McCombes, S. (2023). Descriptive Research | Definition, Types, Methods & Examples. Retrieved from https://www.scribbr.com/methodology/descriptive-research/

45. Newson, A. & Patten, J. (2009). *Blogging and Other Social Media Exploiting the Technology and Protecting the Enterprise.* Routledge.

46. Nikolaou, I. (2014). Social Networking Web Sites In Job Search And Employee Recruitment. *International Journal of Selection and Assessment, 22*(2), 179–189. doi: 10.1111/ijsa.12067

47. Papacharissi, Z. (2009). The virtual geographies of social networks: a comparative analysis of Facebook, LinkedIn and ASmallWorld. *New Media & Society, 11*(1–2), 199–220. doi: 10.1177/1461444808099577

48. Purvis, A. J., Rodger, H. M., & Beckingham, S. (2020). Experiences and perspectives of social media in learning and teaching in higher education. *International Journal of Educational Research Open, 1*, 100018. doi: 10.1016/j.ijedro.2020.100018

49. Redondo, R. P. D., Rodríguez, M. C., Escobar, J. J. L., & Vilas, A. F. (2020). Integrating micro-learning content in traditional e-learning platforms. *Multimedia Tools and Applications, 80*(2), 3121–3151. doi: 10.1007/s11042-020-09523-z

50. Sacerdote, B. (2011). Peer effects in education: how might they work, how big are they, and how much do we know thus far? In *Handbook of the Economics of Education* (pp. 249–277). doi: 10.1016/b978-0-444-53429-3.00004-1

51. Sabha, S. (2018). Impact of Online recruitment on recruitment. *International Journal of Education and Research, 6*(4)

52. Saqr, M., & López-Pernas, S. (2022). Instant or Distant: a temporal network tale of two interaction platforms and their influence on collaboration. In *Lecture notes in computer science* (pp. 594–600). doi: 10.1007/978-3-031-16290-9_55

53. Sassower, R. (2017). Causality and correlation. *The Wiley-Blackwell Encyclopedia of Social Theory*, 1–4. doi: 10.1002/9781118430873.est0585

54. Saunders, M. N. K., Lewis, P., & Thornhill, A. (2015). *Research Methods for Business Students* (7th Ed). Pearson.

55. Semingson, P., Crosslin, M., & Dellinger, J. (2015). Microlearning as a Tool to Engage Students in Online and Blended Learning. *Conference: Society for Information Technology & Teacher Education (SITE)*

56. Shail, M. S. (2019). Using micro-learning on mobile applications to increase knowledge retention and work performance: A literature review. *Cureus.* doi: 10.7759/cureus.5307

57. Shatte, A. B. R., & Teague, S. (2020). Microlearning for improved student outcomes in higher education: A scoping review. *OSF Preprints*. doi: 10.31219/osf.io/fhu8n

58. Statista. (2022). *Number of smartphone users in Indonesia from 2019 to 2029*. Retrieved from https://www.statista.com/forecasts/266729/smartphone-users-in-indonesia

59. Thurlow, C., Lengel, L., & Tomic, A. (2004). *Computer-Mediated Communication*. SAGE

60. Torgerson, C., & Iannone, S. (2020). *Designing Microlearning (What Works in Talent Development).* Association for Talent Development.

61. United Nations. (2022). *Population*. Retrieved from https://www.un.org/en/global-issues/population

62. Valtonen, T., López-Pernas, S., Saqr, M., Vartiainen, H., Sointu, E. T., & Tedre, M. (2021). The nature and building blocks of educational technology research. *Computers in Human Behavior, 128*, 107123. doi: 10.1016/j.chb.2021.107123

63. Van Dijck, J., & Poell, T. (2015). Social media and the transformation of public space. *Social Media + Society, 1*(2). doi: 10.1177/2056305115622482

64. Verhoeven, H., & Williams, S. (2008). *Advantages and Disadvantages of Internet Recruitment: A UK Study Into 'Employers' Perceptions*. Retrieved from https://www.researchgate.net/publication/294698835_Advantages_and_disadvantages_of_internet_recruitment_A_UK_study_into_'Employers'_perceptions

65. Vogt, W. P., Gardner, D. C., & Haeffele, L. M. (2012). *When to Use What Research Design*. Guilford Press.

66. Yin, R. K. (2009). *Case Study Research: Design and Methods*. SAGE.

67. Yokoyama, M. H. (2016). How Social Network Sites (SNS) Have Changed The Employer-Employee Relationship, And What Are The Next Challenges For Human Resources (HR)? *Revista De Gestão, 23*(1), 2–9. doi: 10.1016/j.rege.2015.11.001

68. Zheng, N. X., Martin, P., Brohman, K., & Da Xu, N. L. (2014). Cloud service negotiation in the Internet of Things Environment: A Mixed approach. *IEEE Transactions on Industrial Informatics, 10*(2), 1506–1515. doi: 10.1109/tii.2014.2305641

69. Zide, J., Elman, B., & Shahani-Denning, C. (2014). LinkedIn and recruitment: how profiles differ across occupations. *Employee Relations, 36*(5), 583–604. doi: 10.1108/er-07-2013-0086