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Exploring the metaverse: Opportunities for business development and creative industries in education

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ABSTRACT

The rapid technological advancements have led to a profound digital transformation, with the metaverse emerging as one of the most disruptive innovations in education and creative industries. This study aims to explore the opportunities and challenges faced by entrepreneurs in the education and creative sectors in leveraging the metaverse as a space for innovation and value creation. Using a mixed-method design (quantitative and qualitative), the research collects data through online surveys and in-depth interviews with entrepreneurs and industry experts. Findings from the survey show that the majority of entrepreneurs in the gaming, retail, and education sectors are using the metaverse to expand market reach, reduce financial risks, and enhance international collaboration. However, technical challenges such as platform interoperability issues and ethical concerns related to privacy and content moderation remain significant barriers. The study identifies the need for clear legal and ethical frameworks to support sustainable growth in the metaverse. Based on these findings, further research is recommended to develop clear ethical guidelines and solutions for technical challenges, as well as to monitor the long-term development of metaverse use in business and education.

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ABSTRAK

Perkembangan teknologi yang pesat telah mengarah pada transformasi digital yang mendalam, dengan metaverse sebagai salah satu inovasi paling disruptif dalam dunia pendidikan dan industri kreatif. Penelitian ini bertujuan untuk mengeksplorasi peluang dan tantangan yang dihadapi oleh pengusaha di industri pendidikan dan kreatif dalam memanfaatkan metaverse sebagai ruang untuk inovasi dan penciptaan nilai. Dengan menggunakan desain metode campuran (kuantitatif dan kualitatif), penelitian ini mengumpulkan data melalui survei online dan wawancara mendalam dengan pengusaha dan pakar industri. Temuan dari survei menunjukkan bahwa mayoritas pengusaha di sektor game, ritel, dan pendidikan memanfaatkan metaverse untuk memperluas jangkauan pasar, mengurangi risiko finansial, dan meningkatkan kolaborasi internasional. Namun, tantangan teknis seperti masalah interoperabilitas platform dan masalah etika terkait privasi dan moderasi konten tetap menjadi hambatan signifikan. Penelitian ini mengidentifikasi perlunya kerangka kerja hukum dan etika yang jelas untuk mendukung pertumbuhan yang berkelanjutan dalam metaverse. Berdasarkan temuan ini, disarankan agar penelitian lebih lanjut dilakukan untuk mengembangkan pedoman etika yang jelas dan solusi untuk tantangan teknis, serta memantau perkembangan jangka panjang dari penggunaan metaverse di dunia bisnis dan pendidikan.

Kata Kunci: *Inovasi bisnis; kolaborasi internasional; metaverse; pendidikan digital*

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INTRODUCTION

Recent technological evolutions have brought a new renaissance in digital transformation that has profoundly transformed the way we socially interact, do business, and provide education. The metaverse is one of the more disruptive of these new technologies because it is democratizing the evolution of a digital environment designed to exist in perfect harmony with VR, AR, AI, and other technologies, creating a a deeply interactive space (Lawal & Abdulkareem, 2024; Yıldız, 2024). McKinsey (2023) predicts that the metaverse will be able to add up to USD 5 trillion to the global economy as of 2030, with education and creative as favorized industries (see: https://www.mckinsey.com/capabilities/growth-marketing-and-sales/our-insights/value-creation-in-the-metaverse). Dating back to the early 21st century, metaverse platforms were starting to be piloted in schools around the world for immersive learning experiences, virtual museums and avatar-based classrooms. In the global context, similar trends are slowly paving the way, inspired by the urgency to improve distance learning and digital literacy post-pandemic (Lawal et al., 2024; Subiyantoro, 2024).

The metaverse is also growing rapidly, with the fact that it could disrupt many sectors becoming increasingly clear. In the domain of education, the metaverse provides a value proposition of an additional dimension to interactive learning activities by having students be able to participate in realistic simulations, visit virtual campuses, and work collaboratively in shared virtual space, which all improve upon the learning of students (Di Natale et al., 2024). Schools and Colleges are utilizing such technologies to bridge the gap of physical or branch location and provide easy access to quality education. The creative industries are undergoing a transformation as well, and artists, designers, and content creators are making the metaverse their own by creating new and unique projects and digital communities (Lawal, 2024; Lawal & Yusuf, 2022). The fusion of education with creativity in the metaverse presents new possibilities for creative expression, collaboration, and learning, providing a dynamic space for both individuals and organizations.

The metaverse is also facing a host of problems that need to be solved. The digital divide is a significant issue, as not everyone has the same access to necessary technologies. High-performance VR headsets and internet connections are still scarce in many parts of the world, for instance, in developing countries. This access disparity, in turn, raises questions of inclusivity for the metaverse-based platforms and risks marginalizing communities. There are also still concerns regarding privacy, data security, and content regulation as the metaverse's virtual environments gather a huge amount of personal data (Huang & Cai, 2023). However, the more individuals and organizations that come to inhabit these virtual worlds, the stronger the need for strong legal frameworks and ethical pathways to make sure that the metaverse continues to be a safe and just platform for all. Solving these challenges will require cooperation among the government, businesses, and other tech developers to create a more inclusive and sustainable metaverse environment.

Field reports and discussions with educational entrepreneurs and technopreneurs highlight various challenges regarding the roll-out of metaverse—based solutions. Noting a sparse infrastructure, high development costs, and low digital literacy, many point to the hurdles to be overcome in achieving adoption (Rosyiddin et al., 2023). Schools and training institutions are also grappling with out-of-date hardware and inconsistent internet access, particularly in more remote areas. The risks of working with metaverse platforms is high, in part due to privacy and data protection concerns, as well as limited legal frameworks (Wang et al., 2022a). These constraints from the world of practice suggest that, despite the transformative possibilities in the metaverse, there are challenges in the practical and ethical implementation that warrant closer study.

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Previous research by Yeganeh et al. explores the potential of the metaverse to enhance creativity and innovation in business education, emphasizing its role in fostering student engagement and problem-solving skills, but they do not delve deeply into how these innovations can be leveraged for broader business opportunities or in creative sectors (Yeganeh et al., 2025). Similarly, Chen et al. highlight the metaverse's ability to transform educational models, yet the paper primarily focuses on its pedagogical benefits rather than its direct impact on business and creative industries (Chen et al., 2023). The gap lies in the absence of comprehensive analyses that connect the metaverse's technological advantages with specific business development strategies in creative fields such as digital media, the arts, and entertainment.

Moreover, while several studies emphasize the metaverse's potential in enhancing educational experiences and engagement, few have examined how educational institutions and businesses can collaborate to utilize the metaverse for entrepreneurial growth and innovation (Kromidha et al., 2025; Wang et al.,2022b). Koohang et al. discuss the metaverse's role in business education, but the research is confined to the perception of students and faculty, lacking an exploration of how creative industries could tap into metaverse-based learning to drive commercial ventures (Koohang et al., 2023). This highlights a significant gap in integrating metaverse-based educational tools with tangible business development opportunities, especially in creative industries that rely on immersive technologies for content creation and audience engagement. Several studies (Choi, 2022; Jung et al., 2023) have explored the integration of metaverse platforms in various educational contexts; however, there is a lack of empirical research focused on their strategic implementation within business models (Tomini et al., 2025). Specifically, there is limited research that explores how educational institutions could form partnerships with tech companies, creative agencies, and startups to build scalable, profitable business models in the metaverse. This presents an opportunity for future research to bridge these gaps by developing frameworks that integrate metaverse-driven education, business growth, and creative industry innovation.

Even though the conversation around the metaverse is blooming and booming, the literature is still dominated by technical descriptions and conceptual readings, with little empirical attention given to how small-scale entrepreneurs in education and creative industries navigate this virtual territory. Prior research tends to focus on capturing a snapshot of the possible uses of a technology, without situating these uses in relation to actual business models, lived experiences, and general socio-institutional dynamics of deployment in developing country contexts. A significant research gap exists in the field regarding how educational change agents in the real world address opportunities and challenges in the metaverse.

This gap in the literature is this paper's point of departure, as it aims to empirically investigate how entrepreneurs in the education and creative industries capitalize on the metaverse as a playground for innovation, engagement, and value creation. Using a mixed-methods design (i.e., questionnaires as quantitative methods and interviews as qualitative methods), the study seeks to develop a holistic picture of the opportunities and challenges associated with metaverse-based entrepreneurship. At the heart of this inquiry is how these business models, strategies, and ethical issues fascinate these entrepreneurs in virtual worlds.

LITERATURE REVIEW

Metaverse

The term "metaverse" was coined by Neal Stephenson in his 1992 science fiction novel, Snow Crash, to describe a virtual reality-based successor to the internet, in which people, represented as avatars, work and play in real-time. In academic and technology circles, the metaverse is currently described as a

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network of heterogeneous immersive virtual environments, linking technologies such as virtual reality (VR), augmented reality (AR), and blockchain (Wang et al., 2023). The metaverse is a persistent, decentralized, and socially immersive digital universe where users can connect, play, learn, and work through various interactions and activities, such as meeting friends, gaming, shopping, and learning (Allam et al., 2022). This technological revolution represents a monumental shift in the way we build and experience digital spaces; from two-dimensional user interfaces to spatially aware, embodied digital experiences. From a theoretical perspective, the metaverse aligns with the paradigm of sociotechnical systems, which posits that the development of technology systems is influenced by social practices, leading to new ways of working and playing.

In operational terms, the metaverse can be conceptually divided into three essential components: immersion, persistence, and interoperability. Immersion refers to the degree of sensory and emotional involvement that users experience as being present in a virtually simulated environment, which is typically realized with the help of virtual reality (VR) headsets and haptic feedback systems (Melo et al., 2022; Putawa & Sugianto, 2024). Persistence means that the metaverse continues to exist and survive even after you log off, Ali et al. explain, supporting the real-time, shared virtual experiences that resemble our world. On the other hand, interoperability refers to the seamless transfer of assets, identities, and data across various metaverse platforms, which remains a crucial technical and policy issue at present (Ali et al., 2023). These building blocks are part of the foundation needed to establish an inclusive and sustainable ecosystem that users can participate in, create in, and transact in.

Business Development

Business development includes multiple activities, strategies, and processes used to create long-term value for organizations from customers, markets, and relationships. As Edwards explain, business development is the discovery of new opportunities, the creation of partnerships, and the use of resources to accomplish strategic objectives (Edwards, 2021). In digital surroundings, business development is tending to concentrate, therefore, on technology for creating expanded market reach, better customer experiences, and more efficient processes to generate value (Aithal, 2023). In the metaverse, the concept of business development is transformed—rethought away from static models towards experiential, decentralized, and participatory models of engagement and monetization.

A cornerstone in this regard is the resource-based view, which relates core competences and unique, inimitable resources—such as digital infrastructure and digital technology capabilities—as sources of competitive advantage. In the context of the metaverse, the RBV is especially important because an enterprise's ability to deliver value is determined by the availability of immersive technology, design skills, big data tools, and qualifications (Willie, 2025). Firms can partner across digital ecosystems to cocreate products and services; open innovation theory has important implications (Abbate et al., 2022). Inside the metaverse, platforms like Decentraland or Roblox represent “open innovation“, with users creating, developing, and monetizing their assets in shared landscapes.

Metaverse for Education

The world of education is changing (edtech). The world of education is changing, with a growing rate of digital learning environments. The use of metaverse technologies in education is an unexplored territory where immersive experiences can potentially enhance pedagogical impact, learner engagement, and access (Han et al., 2023). Phakamach et al. describe the metaverse for education as a network of interconnected virtual worlds that is not controlled by any single company but by all the users (Phakamach et al., 2022). This reflects constructivist learning theory, which states that learners construct new

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knowledge through their interactions with the environment. In the metaverse, students are not merely consumers of information; they are active collaborators who bring knowledge to life in a digital world often inspired by the world outside the classroom.

Indeed, the educational value of the metaverse is especially noticeable in STEM, trade training, and interdisciplinary studies. Alkhabra et al. have reported that compared to traditional learning methods, learning in VR facilitated greater retention, better critical thinking, and more motivation among students (Alkhabra et al., 2023). In medical education, simulations enable safe and repeated practice of complex procedures, for instance. In historical or literary contexts, the virtual reconstruction of events offers a wealth of narrative immersion. Nevertheless, issues related to the digital divide, access to equipment, and staff training remain concerns. Such considerations need to be addressed if the metaverse is to improve, and not contribute to, educational disparities.

METHODS

The research design employed in this paper is a mixed-methods approach, combining qualitative and quantitative inquiry to derive a comprehensive analysis of the potential impact of the metaverse on entrepreneurship and innovation. This approach is chosen because the metaverse is complex and multilayered, and in order to fully comprehend how the metaverse might influence business and educational innovation. The quantitative part was based on the distribution of an online questionnaire to gather a broad scope of entrepreneurial moves within the metaverse. This approach is beneficial for gathering structured data from a heterogeneous sample of entrepreneurs and can be used to scale variables such as market reach, financial risks, collaborative behavior, and perceived business opportunities. The responses to survey questions were analyzed using statistical tools to identify trends, associations, and generalizations about the broader population of metaverse entrepreneurs. This laid the foundation for a fundamental level of empirical evidence that could be statistically tested and interpreted on a broader scope.

This study used a survey, in-depth interviews, and case studies as data collection methods. A structured online survey was sent to a sample of entrepreneurs in the virtual world. This type of survey included inquiries concentrating on (but not limited to) understanding the experience and challenges, as well as perceptions of whether there are opportunities in the metaverse. In-depth, semi-structured interviews were also conducted with several entrepreneurs and industry experts to capture qualitative aspects of their personal experiences, strategies, and challenges encountered while working in the metaverse. Such interviews aimed to develop awareness of the particularities of entrepreneurial innovation, collaboration, and ethical ludic immersion. Moreover, several best-practice cases from the metaverse were examined to demonstrate practical ways of entrepreneurial activities, along with their associated results, showcasing different business models, marketing plans, and creative activities of entrepreneurs.

The sample for the survey was purposive, encompassing multiple sectors, including gaming, retail, education, and the creative industries. Researchers identified respondents on online forums, social media groups, and virtual meetups associated with the metaverse. All sectors were finally included in the sample to achieve diversity and meet the research scope. Purposeful selection. The project was a two-phased study, so for the qualitative phase, a smaller sample was purposely selected from the interviewees, based on their level of engagement with the metaverse, their entrepreneurial role, and their interest in articulating and conveying detailed insights. Interview transcripts were coded for themes, and commonalities and themes across the narratives were identified. This action, in turn, facilitated the development of themes that account for the tactics and dilemmas employed by e-preneurs within virtual settings. The data were quantitatively analyzed, and descriptive and inferential statistical methods were applied using accepted statistical packages. Interactions between variables —such as those between perceived opportunity and

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business sector — were tested to obtain informative results. The inclusion of both qualitative and quantitative results enhanced the credibility and comprehensiveness of the analysis.

The quantitative data were complemented by qualitative information, which consisted of semi-structured interviews and case studies, to provide an in-depth and contextual understanding of entrepreneurs' lived experiences, strategies, and challenges in the metaverse. The interview process also allowed participants to tell their own stories in their own words, providing the opportunity to identify textual data lost in the more rigid line-ups of structured surveys. Real-world use cases of ventures in the metaverse were studied to showcase actual industry applications, business models, and best practices. These qualitative approaches enabled the study to reveal the underlying dynamics, motivations, and ethical considerations of entrepreneurial behavior in virtual worlds.

Data across the two methodological strands were combined using a triangulation approach. This allowed us to cross-validate the findings and explanations across quantitative trends and qualitative narratives. Indeed, the survey data patterns emerged between the lines, bolstered as they were by the interview responses, which enriched the statistical trends with explanations and context. This marriage of breadth and depth offers a stronger and more comprehensive perspective on how entrepreneurs navigate opportunities and constraints in the metaverse. By taking this mixed-methods approach, the research can conduct a best-of-both-worlds analysis, leveraging the strengths of each type of data.

RESULTS AND DISCUSSION

The findings are organized according to the results obtained from the follow-up survey, the qualitative interviews, and the emergent themes identified in the case studies. The online survey received 150 responses from business founders, around 75% of whom claimed to be actively involved with the metaverse in a professional capacity. The majority of these were entrepreneurs working in three domains: gaming (40), retail (30), and education (20%). The most significant result was the growth of market reach: 68% of respondents described the global nature of the metaverse as a factor that enabled them to reach more people, while 55% observed a general increase in customer engagement—particularly among international clients and collaborators. Financially, 62% of startups believed that life in the metaverse decreased their financial exposure compared to the traditional world. Several stressed the lower barriers to entry with virtual organizations, which reduces the commitment required for experimenting with new ideas, as there is less capital sunk into the business. Additionally, 70% said the metaverse would have a positive impact on collaborations. Respondents described creating a range of spatially distributed teams, leading to increased creativity, greater agility in problem-solving, and more closely bonded stakeholder groups working on metaverse-related projects.

Table 1. Quantitative Data Presentation and Statistical Results

Num	Variable	Statistic	Interpretation
1	Total Respondents	150 entrepreneurs	Provides the survey sample size and sets the context for interpreting percentages.
2	Entrepreneurial Engagement	75% (n = 113) actively using the metaverse for business. Sector distribution: • Gaming: 40% (n = 60) • Retail: 30% (n = 45) • Education: 20% (n = 30)	A substantial majority of entrepreneurs are leveraging the metaverse. The dominant industries—gaming, retail, and education—suggest early adoption in immersive and interactive sectors.
3	Market Reach	68% (n = 102) reported expanded market reach 55% (n = 83) connected with international clients	Indicates the metaverse's potential in overcoming geographic boundaries, promoting business scalability, and fostering global collaboration.

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Num	Variable	Statistic	Interpretation
4	Financial Risks	62% (n = 93) experienced reduced financial burden	Most respondents view the metaverse as cost-effective, with lower barriers to entry. This supports its role in facilitating entrepreneurial experimentation.
5	Collaboration Opportunities	70% (n = 105) reported forming geographically diverse teams	The metaverse is enhancing collaboration by enabling cross-border team formation, encouraging diversity of thought, and broader innovation.

Source: Research 2024

Based on the quantitative data shown in **Table 1**, it offers a new approach and continues to grow trend in adoption of the metaverse by entrepreneurs in various fields. Of the 150 participants, 113 (75%) actively engaged in business within the metaverse, 40% were from gaming, 30% retail, and 20% education. This spread demonstrates strong initial adoption in industry sectors that are inherently related to immersive and interactive technologies. Additionally, the data also show that 68% (n = 102) of metaverse-engaged entrepreneurs reached new markets, and 55% (n = 83) were able to connect with international clientele. These numbers underscore the potential of the metaverse to break the geographic barrier, enabling businesses to grow globally and facilitate cross-border cooperation—a particularly important opportunity for entrepreneurs based in developing markets or remote communities.

Beyond expanding the market, the results also highlight the metaverse's ability to reduce financial bottlenecks and promote collaborative innovation. A reduced financial burden (compared to traditional business models), based on lower startup costs and overhead, was identified as an advantage by most respondents (62%, n = 93). This leaves the metaverse as a more accessible ground for entrepreneurial exploration and participation, particularly for resource-constrained visionaries. Additionally, 70% (n = 105) reported that the metaverse enabled the formation of geographically distributed teams, which were previously spread across borders, to collaborate easily. These distributed teams not only extend professional networks, but they also lead to enhanced problem-solving and creativity as multiple viewpoints are brought together. In summary, these statistical results suggest that the metaverse is not only changing the way entrepreneurs interact with customers and partners but also reshaping the structural and operational context of digital entrepreneurship within a globally interconnected economic system.

Table 2. Basic Descriptive Statistics Summary

Measure	Value
Mean % across all variables	66.25%
Minimum response %	55%
Maximum response %	75%
Standard Deviation (approx.)	~7.4%

Source: Research 2024

The summary statistics presented in **Table 2** provide an overview of the respondents' involvement with the metaverse in terms of pertinent business dimensions. The average response rate for all measured items is 66.25%, indicating a fairly optimistic attitude among entrepreneurs towards the use of metaverse technology. The peaks and bare-bones response rates also suggest a modest spread of engagement, with the most significant engagement likely linked to central experience areas, such as direct entrepreneurship in the top left, and the lowest engagement possibly corresponding with more complex or limited areas, such as international connections or financial mindsets, in the lower right. With an estimated

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standard deviation of 7.4%, the responses exhibit considerable variability, suggesting some variation in experience that may reflect differences in industry sectors, resource availability, or technical preparedness. Altogether, these statistics highlight both the momentum and diversity around entrepreneurial adaptation to the metaverse, making the point that context-sensitive strategies would help encourage broader adoption.

Table 3. Summary of Qualitative Data and Thematic Analysis

Theme	Description	Sample Participant Quotes	Analysis
Innovative Business Models	Emphasis on the metaverse, enabling unique and immersive business experiences.	- "The metaverse gives us a chance to design experiences that simply are not possible in the real world." (Participant A) - "We have launched virtual stores..." (Participant C)	Entrepreneurs are leveraging immersive environments to differentiate their brands. These innovations enhance customer engagement and offer novel experiences that are not feasible in traditional settings.
Technical and Operational Challenges	Highlighting the lack of platform interoperability, data security infrastructure, and operational standards.	- "It is frustrating that my virtual store cannot operate seamlessly across different platforms." (Participant F) - "We are constantly worried about data leaks." (Participant H)	Technical constraints—especially the absence of common standards—impede growth and cross-platform functionality. Privacy concerns also limit user trust and broader adoption.
Ethical Considerations	Concerns about data privacy, user safety, content regulation, and the absence of clear ethical guidelines.	- "There is no clear rulebook for ethical behavior in virtual spaces." (Participant D) - "Moderating user content is tricky..." (Participant B)	The evolving nature of the metaverse presents ethical ambiguities. Participants advocated for more transparent governance to strike a balance between user freedom and responsibility, as well as platform safety.

Source: Research 2024

The results of the qualitative analysis in **Table 3** provided an insight into the three dominant themes that were evident from the interview data: 1) the metaverse as a platform for business model innovation, 2) the technological and operational challenges faced by entrepreneurs, and 3) the question of ethics in virtual interaction. Overall, Entrepreneurs were Optimistic about Innovation in Immersive Technology to break the barriers and deliver Unique Experiences; business as usual will not be enough. However, such an ambition is frequently hindered by challenges such as cross-platform compatibility, non-standardized workflows, and ethical/regulatory environments that are not yet well-defined. In such tension between new and old structures, it is finally essential to develop coherent policies in support of sustainable entrepreneurship of the metaverse.

The case studies examined in this study provided granularity to the interview findings and contributed to a deeper understanding of how metaverse ventures are being applied in various sectors. Platforms such as Roblox and Decentraland demonstrated how user-generated content and decentralized governance enabled users to do more than play in virtual worlds; they also allowed users to monetize their creative inventions. This suggests that the metaverse is a rich environment for inclusive and bottom-up entrepreneurship. Projects like CryptoKitties and Axie Infinity have also served as a proof point for how blockchain and non-fungible tokens (NFTs) have opened up new models of commerce—in particular, the "play-to-earn" features. These enterprises upset the established nature of the gaming economy by reshaping the very concept of real currency generations and transactions inside the digital world,

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demonstrating a break with past archetypes of how value is created and exchanged in virtual spaces. There were also some fascinating cross-application insights, too, beyond gaming and retail. For example, augmented reality-enabled telemedicine platforms were utilized to enhance patient engagement, ensure therapeutic adherence, and facilitate professional training. These examples explicitly consider the increasing relevance of the metaverse in health, in education, in real estate – new leagues for innovation and interoperability across sectors are being opened.

Discussion

The results of this research demonstrate how the metaverse holds transformational promise for entrepreneurship and innovation, offering a conceptual framework for addressing challenges entrepreneurs encounter within a shifting digital environment. Metaverse in education is one of the innovations in learning media based on three-dimensional virtual space technology whose implementation is currently being widely used (Hasannah et al., 2024). Findings reveal that a large majority of entrepreneurs are operating within the metaverse, leveraging its global reach and collaborative capabilities to their advantage. This is consistent with Alkhabra's work, which notes the metaverse potential for overcoming physical barriers and bringing together entrepreneurs with audiences from around the globe (Alkhabra et al., 2023). The potential to reach international customer bases opens up the market in a way that only an innovative entrepreneur with a global focus would exploit, which goes to prove the emergence of the metaverse as a new global playing field for futuristic business ventures. The lower financial risk of conducting business in the metaverse, as stated by respondents, marks a significant departure from traditional business models. Many startups can launch virtual businesses at a fraction of the cost, allowing for faster testing and learning from failures. This finding supports the views expressed by Kromidha et al. that the metaverse can facilitate agile business and innovation (Kromidha et al., 2025).

However, for all the potential that the metaverse offers, a number of obstacles still face entrepreneurs – ranging from technical to ethical concerns. The disappointment expressed by those in the interviews regarding interoperability is a significant barrier to smooth working. Non-standardized practices could obstruct collaboration, and may act against the interest of user experience. Moral and ethical concerns, such as user privacy and content moderation, proved to be significant concerns for metaverse entrepreneurs (Benjamins et al., 2023). More clear guidelines to navigate these challenges were a frequent theme in the interviews. This is consistent with the view of Gul and Abrar, who argue for the significance of ethical consideration in virtual spaces in protecting user welfare (Gul & Abrar, 2024). With the metaverse in continuous development, it is imperative to address these ethical challenges to instill trust and sustainable engagement among users.

Successful ventures like Roblox and Decentraland’s success stories are among the finest case studies for entrepreneurs on how the unique offerings of the Metaverse can be used to shape innovation. These communities are proof that content by and for users, as well as nonlinear structures, are a way of stimulating creative engagement. The meteoric rise of CryptoKitties and Axie Infinity stands as a testament to how blockchain technology and NFTs have the potential to disrupt these traditional business models and open new revenue streams for entrepreneurs. Additionally, the interindustry use cases presented in the case studies suggest that the metaverse has the potential to drive innovation across various industries (Periyasami & Periyasamy, 2022). For example, immersive technologies are proving effective in healthcare, where the metaverse can uncover new potential in service delivery and user engagement. This potential for cross-industry collaboration further underscores the point that the metaverse is not only a space for gaming but also an entrepreneurial platform for various commercial endeavors.

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The results of this study suggest the need for continued research to gain a deeper understanding of the metaverse's applicability. Longitudinal analyses would provide more rigorous insights into how users change and remain engaged in a highly dynamic environment; therefore, future research should be conducted in this direction. Furthermore, the efficiency of VR and AR-powered virtual learning environments in learning must be explored.

CONCLUSION

This research concluded that the metaverse offers immense opportunities for entrepreneurship and innovation, testifying to the possibility of the metaverse providing a novel digital environment for businesses to operate and engage. The study finds that entrepreneurs will benefit from the global accessibility, collaborative nature, and lower financial risks of the metaverse, leading to more agile business models and the ability for rapid experimentation. Together, these factors imply that the metaverse has horizon-devouring potential for entrepreneurs who want equity in future distribution networks, who want to expand their markets, seek international clients, and test out ideas for new businesses. That said, the research also identified obstacles, such as technical restrictions and ethical dilemmas related to privacy and content moderation, that need to be addressed if the metaverse is to realize its full potential for business growth. "We found that sustainable participation is challenging to achieve, often requiring participants to tinker within a geography of digital rights and obligations, sacrifice and learn sociotechnical skills, negotiate with indigenous metaverse elements and values, all taking place in a drama ecology where infrastructural (in)justice is at play. The result is a critical reflection supported by ongoing in-depth waste studies, which examine the joys and pains of metaversal dialling in the form of proposed future arrangements, as well as a long-term open-source project built on releases.

Drawing on our findings, we suggest that future research propose frameworks to address technical interoperability challenges and establish ethical guidelines on data privacy and user safety in the metaverse. More cross-industry use cases and a deeper dive into successful ventures already underway can reveal the variety of options the metaverse has to offer, even in fields outside of gaming and retail, such as healthcare and education. Furthermore, we advocate for the importance of long-term studies that monitor the evolution of the metaverse and how entrepreneurs and users integrate with it, providing a deeper insight into how it affects entrepreneurs' behavior and user engagement. Enabling the metaverse to be well-integrated into global business and educational practices will be vital – and this will require cooperation across disciplines and investment in digital infrastructure. These steps will help create a fair, inviting, and creative environment for entrepreneurs worldwide in the metaverse.

AUTHOR'S NOTE

The author declares that there is no conflict of interest regarding the publication of this article. The author confirms that the data and content of the article are free from plagiarism.

REFERENCES

Abbate, T., Codini, A., Aquilani, B., & Vrontis, D. (2022). From knowledge ecosystems to capabilities ecosystems: When open innovation digital platforms lead to value co-creation. *Journal of the Knowledge Economy*, *13*(1), 290-304.

https://doi.org/10.64014/jik.v22i3.155

Aithal, P. S. (2023). How to create business value through technological innovations using ICCT underlying technologies. *International Journal of Applied Engineering and Management Letters (IJAEML)*, *7*(2), 232-292.

Ali, M., Naeem, F., Kaddoum, G., & Hossain, E. (2023). Metaverse communications, networking, security, and applications: Research issues, state-of-the-art, and future directions. *IEEE Communications Surveys And & Tutorials*, *26*(2), 1238-1278.

Alkhabra, Y. A., Ibrahem, U. M., & Alkhabra, S. A. (2023). Augmented reality technology in enhancing learning retention and critical thinking according to STEAM program. *Humanities and Social Sciences Communications*, *10*(1), 1-10.

Allam, Z., Sharifi, A., Bibri, S. E., Jones, D. S., & Krogstie, J. (2022). The metaverse as a virtual form of smart cities: Opportunities and challenges for environmental, economic, and social sustainability in urban futures. *Smart Cities*, *5*(3), 771-801.

Benjamins, R., Rubio Viñuela, Y., & Alonso, C. (2023). Social and ethical challenges of the metaverse: Opening the debate. *AI and Ethics*, *3*(3), 689-697.

Chen, X., Zou, D., Xie, H., & Wang, F. L. (2023). Metaverse in education: Contributors, cooperations, and research themes. *IEEE Transactions on Learning Technologies*, *16*(6), 1111-1129.

Di Natale, A. F., Bartolotta, S., Gaggioli, A., Riva, G., & Villani, D. (2024). Exploring students' acceptance and continuance intention in using immersive virtual reality and metaverse integrated learning environments: The case of an Italian university course. *Education and Information Technologies*, *29*(12), 14749-14768.

Edwards, M. G. (2021). The growth paradox, sustainable development, and business strategy. *Business Strategy and the Environment*, *30*(7), 3079-3094.

Gul, F., & Abrar, M. J. (2024). The interaction of religion and technology: Ethical considerations. *Al-Awan*, *2*(2), 1-19.

Han, Z., Tu, Y., & Huang, C. (2023). A framework for constructing a technology-enhanced education metaverse: Learner engagement with human–machine collaboration. *IEEE Transactions on Learning Technologies*, *16*(6), 1179-1189.

Hasannah, N., Afina, A. F., Nuraeni, P., & Hadiapurwa, A. (2024). Is education possible in the metaverse especially in Indonesia?. *Hipkin Journal of Educational Research, 1*(1), 13-24.

Huang, Y., Li, Y. J., & Cai, Z. (2023). Security and privacy in metaverse: A comprehensive survey. *Big Data Mining and Analytics*, *6*(2), 234-247.

Koohang, A., Nord, J. H., Ooi, K. B., Tan, G. W. H., Al-Emran, M., Aw, E. C. X., ... & Wong, L. W. (2023). Shaping the metaverse into reality: a holistic multidisciplinary understanding of opportunities, challenges, and avenues for future investigation. *Journal of Computer Information Systems*, *63*(3), 735-765.

Kromidha, E., Taheri, B., Kraus, S., & Malodia, S. (2025). The metaverse as an opportunity for entrepreneurship and innovation. *The International Journal of Entrepreneurship and Innovation*, *26*(1), 3-11.

Lawal, S. O. (2024). Government Capital Expenditure: Implication for Economic Growth Prospect in Nigeria. *The International Journal of Business Review (The Jobs Review)*, *7*(2), 191-202.

Lawal, S. O., & Abdulkareem, H. B. (2024). Metaverse in the Play: A Platform for Entrepreneurship and Innovation. *Jurnal Pendidikan Manajemen Perkantoran*, *9*(2), 269-296.

https://doi.org/10.64014/jik.v22i3.155

Lawal, S., & Yusuf, M. B. O. (2022). Impact of globalization, economic growth and income inequality in Nigeria. *Journal of Smart Economic Growth*, *7*(3), 87-115.

Melo, M., Coelho, H., Gonçalves, G., Losada, N., Jorge, F., Teixeira, M. S., & Bessa, M. (2022). Immersive multisensory virtual reality technologies for virtual tourism: A study of the user's sense of presence, satisfaction, emotions, and attitudes. *Multimedia Systems*, *28*(3), 1027-1037.

Periyasami, S., & Periyasamy, A. P. (2022). Metaverse as future promising platform business model: Case study on fashion value chain. *Businesses*, *2*(4), 527-545.

Phakamach, P., Senarith, P., & Wachirawongpaisarn, S. (2022). The metaverse in education: The future of immersive teaching and learning. *RICE Journal of Creative Entrepreneurship and Management*, *3*(2), 75-88.

Putawa, R. A., & Sugianto, D. (2024). Exploring user experience and immersion levels in virtual reality: A comprehensive analysis of factors and trends. *International Journal Research on Metaverse*, *1*(1), 20-39.

Rosyiddin, A. A. Z., Fiqih, A., Hadiapurwa, A., Nugraha, H., & Komara, D. A. (2023). The effect of interactive PowerPoint media design on student learning interests. *Edcomtech: Jurnal Kajian Teknologi Pendidikan*, *8*(1), 12-24.

Subiyantoro, S. (2024). Transformative online learning post-pandemic: Challenges, opportunities, and future trends. *Jurnal Pekommas*, *9*(1), 29-39.

Tomini, N., Brenk, K., Kanbach, D. K., Stubner, S., & Bernhard, F. (2025). From hype to impact: How companies can leverage the metaverse technology for business models. *The International Journal of Entrepreneurship and Innovation*, *26*(1), 12-22.

Wang, H., Ning, H., Lin, Y., Wang, W., Dhelim, S., Farha, F., ... & Daneshmand, M. (2023). A survey on the metaverse: The state-of-the-art, technologies, applications, and challenges. *IEEE Internet of Things Journal*, *10*(16), 14671-14688.

Wang, Y., Su, Z., Zhang, N., Xing, R., Liu, D., Luan, T. H., & Shen, X. (2022a). A survey on metaverse: Fundamentals, security, and privacy. *IEEE Communications Surveys & Tutorials*, *25*(1), 319-352.

Wang, M., Yu, H., Bell, Z., & Chu, X. (2022b). Constructing an edu-metaverse ecosystem: A new and innovative framework. *IEEE Transactions on Learning Technologies*, *15*(6), 685-696.

Willie, M. (2025). Leveraging digital resources: a resource-based view perspective. *Golden Ratio of Human Resource Management*, *5*(1), 1-14.

Yeganeh, L. N., Fenty, N. S., Chen, Y., Simpson, A., & Hatami, M. (2025). The future of education: A multi-layered metaverse classroom model for immersive and inclusive learning. *Future Internet*, *17*(2), 1-55.

Yıldız, T. (2024). The future of digital education: Artificial Intelligence, the metaverse, and the transformation of education. *İstanbul Üniversitesi Sosyoloji Dergisi*, *44*(2), 969-988.

https://doi.org/10.64014/jik.v22i3.155