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VOICES FROM THE SUMMIT: EXPLORING THE GROWTH NEEDS OF KINABALU GEOPARK GUIDES

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Abstract:

This paper exploring the professional development (PD) needed by mountain guides within the Kinabalu UNESCO Global Geopark (KUGG). Drawing on a qualitative research design, the research made use of purposive sampling to recruit 80 participants, involving mountain guides, Geopark officials, instructors, and climbers. Data were gathered using semi-structured interviews and observations, which were analyse using thematic analysis. A number of key areas for professional growth of mountain guides emerged from the research, ranging from advanced safety and rescue courses, effective communication, leadership, and increased sensitivity to sustainable tourism practices. This paper reveals the necessity of collaborative action by the management of the park and the stakeholders to provide specific focused training, improve budget allocation, and establish networks of peer support, enhancing intercultural competency, and recommendations highlight augmenting MGs' professional skill, sustainable tourism promotion, and the achievement of the conservation objectives of the Geopark hinge on addressing these needs. MGs that facing. This study provides insightful analysis of PD approaches for guides in protected regions.

Keywords:

Professional Development Needs, Mountain Guides, Kinabalu UNESCO Global Geopark

Introduction

Inspired by a whole strategy including preservation, teaching, and professional development, UNESCO Global Geoparks (UGGs) reflect coherent geographic areas marked by notable geological histories. These regions are run with goals of public awareness building,

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preservation of geological features, and encouragement of environmentally friendly travel. All of these help the local community to be involved and to thrive economically (Henriques & Brilha, 2017; Brilha et al., 2018). Early in the 2000s, the concept of establishing UNESCO Global Geoparks changed to reflect protection of geological legacy locations and encouragement of growth. Originally established by UNESCO in 2004 with the intention of linking geoparks all around, the Global Geoparks Network (GGN) Introduced by UNESCO in 2015, the "UNESCO Global Geoparks" signaled a turning point in acknowledging and safeguarding geological legacy all around (Megerle, 2021). Advancement of geosciences education, professional development, and an awareness and respect of natural and cultural variety depends on these geoparks (Catana & Brilha, 2020; Henriques & Brilha, 2017). One of the most amazing natural wonders in the world, Kinabalu UNESCO Global Geopark (KUGG), recently approved by UNESCO, is tucked away in the heart of Borneo and has an unequaled great biodiversity and geological legacy (Sabah Tourism Board, 2022). Popular for both local and international climbers, the park hosts Mount Kinabalu UNESCO Global Geopark, the tallest summit in Southeast Asia (Matius et al. 2021). Apart from providing a main habitat for many species, this amazing mountain range draws thousands of tourists annually, therefore supporting the local business (Matte, 2018). Given Kinabalu UNESCO Global Geopark's importance as a recently recognized UNESCO Geopark and its relevance as a site for biodiversity and geological legacy, it is vital to help the professional growth of mountain guide (MGs) in redefining their services. Maintaining the great success of this terrain depends on empowering the main caretakers the mountain guides. The classification as a UNESCO Global Geopark region implies that mountain guides should expand their knowledge and skills to satisfy the increased expectations of climbers. As the popularity of KUGG keeps growing, the viability and longevity of its unique sites will mostly rely on the professional growth of mountain guides. Thereby improve their skills and connect their activities with geotourism.

Though their importance is clear-cut, the professional growth of these leaders is sometimes underappreciated and neglected. The expectations put on mountain guides have changed as tourism trends move toward sustainability, cultural authenticity, and individual experiences. This change requires improved communication skills, environmental awareness, cultural sensitivity, and lifelong learning not only physical stamina and trail expertise. This project, "Voices from the Summit," seeks to investigate the developmental needs and goals of the mountain guide working within the Kinabalu UNESCO Global Geopark. Through the capture of their viewpoints, experiences, and challenges, this study aims to expose areas of existing training inadequacy and draw attention to chances for upskill development. The ultimate aim is to help mountain guides create a more empowered, professional, and future-ready community capable of preserving and enhancing the Kinabalu Geopark's values going forward. Training and certification programs call for participation by principles and guides (Cheung, 2016). This study is crucial because professional development could significantly enhance the skills and performance of mountain guides. Professional development, according to Megerle (2022) and Aoulad-Sidi-Mhend et al. (2020), consists in a range of events aimed to increase the capacities, know-how, and skills needed to succeed in one's area of work. It comprises a conscious and continuous endeavor to improve professional skills, fit the evolving needs of the workplace, and meet changing conditions. Apart from being guides allowing guests to appreciate its beauty, mountain guides represent champions of the unique geological, biological, and cultural history of the Geopark. Their obligations cover stewardship, instruction, and interpretation in addition to simple physical guidance (Corpuz, 2017). Most

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research, like those by Bidul (2022) and Ariffin and Ching (2019), concentrated on the purposes and relevance of tour guides.

Limited money for MGs' professional development and limited study point to the fact that MGs' professional development is still not well understood. One may say that this study is first in Malaysian academia. Consequently, there are few trained tour guides and growing concern regarding the survival of Kinabalu UNESCO Global Geopark (Kuilis-Bosimin & Chan, 2018). Moreover, the rising popularity of climbing trips and adventure tourism has made qualified guides even more important. Growing numbers of people are engaging in these adventures; the activities are getting more challenging and dangerous (Rasoolimanesh et al., 2018). This suggests that, absent a skilled advisor, more people could be in risk. Helping mountain guides to grow professionally could lead to better services for climbers. With continuous training and skill development programs, guides may hone their leadership, customer service, and communication abilities. Consequently, climbers may have a more enjoyable and rewarding experience, which would lead to good remarks and increased satisfaction. Mountain guides are vital to reduce their harmful impacts on the ecosystem and ensure that guests of the Kinabalu UNESCO Global Geopark enjoy their stay. However many mountain guides lack the knowledge and training required to manage visitor impact, therefore endangering the ecology and species of the park (Braga et al. 2017). Should this research be neglected or not pursued, the park, its visitors, the local economy, and the KG protected site may suffer greatly. Untrained and underfunded mountain guides, for example, could not be able to promote professional tourist practices, therefore affecting the cultural and natural resources of the park (Dan, 2019). Furthermore, ignoring mountain guide professional growth could result in a poor experience for guests, therefore compromising the park's reputation and the regional travel industry.

Ignoring this could harm the local economy by reducing tourism income and happiness, therefore affecting Wan Mohamad Ariffin, 2018). Meela (2019) claims, "the quality of visitor experiences can significantly impact tourism in protected areas, as it influences both repeat visits and positive word-of-mouth promotion." Consequently, investments in the professional development and support of mountain guides are essential to promote professional tourist practices in Kinabalu UNESCO Global Geopark and to maintain the long-term sustainability of the park and its surrounding communities (Gillespie, 2020). Moreover, MGs represent the public face of the park and act as ambassadors teaching visitors the need of responsible travel and conservation (Buonincontri et al. 2021). They so directly influence the capacity of the park to attract visitors and generate income as well as its long-term viability. Consequently, the results of this study will have a major influence on the management of Kinabalu UNESCO Global Geopark and offer suggestions for promoting ethical travel behavior there. This study will also contribute to the body of knowledge on tourism and environmental management (Mukhtar, 2019) and increase our understanding of the purpose of mountain guides in supporting professional travel policies. By means of investments in their training and development, mountain guides can equip themselves with the knowledge and skills required to appropriately transmit to visitors the significance of conservation and professional tourism practices (Jaafar et al., 2019). This could thus lead to a climbing community more conscious and ecologically aware, so reducing the negative consequences of tourism and safeguarding the park for next generations. This study will expose ways to improve park tourism and offer perceptive analysis on the current state of mountain guide aid and training in Kinabalu UNESCO Global Geopark. By providing a comprehensive knowledge of the particular professional development path of mountain guide in the Kinabalu UNESCO Global Geopark

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(KUGG), this study intends to make a major contribution to the field. The acquired knowledge will be valuable in developing especially customized training courses and interventions meant especially for the needs of mountain guides operating in this particular geopark area.

Literature Review

One might get a clue of popularity from the annual count of climbing permits issued. According to research, one of the fastest-growing sectors of the travel business globally outdoor and adventure tourism including climbing is This trend is clear in places like the Kinabalu UNESCO Global Geopark, where the natural surroundings offer special geological formations as well as leisure activities. Attracting an amazing 500,000 visitors and therefore confirming its ranking as one of Malaysia's top travel attractions, the Kinabalu UNESCO Global Geopark attracted great attention in 2019. This amazing statistic highlights the irresistible appeal of the park, attracting both domestic and foreign visitors looking to completely experience its natural beauties (Sabah Tourism, 2023). With its breathtaking summits and amazing natural surroundings, Mount Kinabalu UNESCO Global Geopark is a well-known draw for travellers visiting Malaysia annually. Still, the major contribution mountain guides make to ensure a safe and culturally fulfilling experience for guests has not been fully investigated. This study meets the pressing need for thorough investigation and efforts meant to improve mountain guide professional development on Mount Kinabalu UNESCO Global Geopark. Operating within the Kinabalu UNESCO Global Geopark (KUGG), mountain guides have several obligations and obstacles that call for ongoing professional development (PD). Several elements contribute to this necessary: safety compliance, client happiness, environmental stewardship, and flexibility in response to changing travel patterns.

By means of the identification of their particular needs and the formulation of appropriate training programs, the Kinabalu UNESCO Global Geopark could gain from MG empowerment and professional development (Ahmadpour et al., 2020). Mountain guiding is a very specialised job that requires a distinct combination of technical knowledge, physical stamina, environmental awareness, and customer service skills. MGs have to pursue constant professional development because of the inherent hazards and the dynamic outside environment if they are to keep high safety standards, enhance directing ability, and remain current with changing industrial needs. Emphasising technical training, safety procedures, environmental awareness, physical fitness, communication skills, business management, and technical training, this research seeks to identify the most critical professional development needs for Mgs. One has to be highly technologically advanced to qualify as an MG (Mustafa et al., 2023).

According to Hanly et al. (2023), environmental changes make climbing paths difficult and need for flexible plans among guides. Mount Kinabalu too requires similar considerations since the preservation of natural ecosystems has to be balanced with the needs of increasing tourism. Consequently, when handling climbing permits, stakeholders must apply sustainable methods and create educational initiatives encouraging ecological responsibility among climbers (Hanly et al., 2023). One cannot emphasise the value of professional growth (PD) for mountain guides inside the Kinabalu UNESCO Global Geopark (KUGG). Mount Kinabalu's climbing permits are increasing, and the demands imposed on guides grow as well. Therefore, sufficient training and education are not only necessary for the environmental preservation but also for the safety of the climbers. Ignoring the need of such professional development would have serious consequences. Therefore, the search of knowledge is really vital. Growing popularity of

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climbing sports can result in more environmental pressure including problems with waste management and habitat destruction. Studies stress the need of guides as protectors of the environment, where their knowledge of sustainable living is absolutely vital (Lai et al., 2015). Knowledgeable in ecological preservation guides can teach climbers on reducing their environmental impact, therefore guaranteeing the lifetime of these natural resources. Ignoring to give guides with this information runs the danger of long-term destruction of the immaculate ecosystems within KUGG, so affecting the tourism business as well as the ecology. Strong professional identity guides often help to improve interactions with clients, therefore influencing their whole experience (Liu et al., 2022). A good mountaineering experience depends much on professional growth possibilities emphasising communication, leadership, and interpersonal skills. Ignoring these factors puts guides at risk providing a poor experience, which could result in bad ratings and lower travel volume. Training in advanced lifesaving skills and certifying as a Wilderness First Responder (WFR) should comprise a guide's professional development (Sabah Parks, 2023).

Methodology

Research Design and Rationale

The Research Design Of The Study Is Based On Qualitative Research. According to Pandey and Pandey (2021), research design is a plan or blueprint that methodically incorporates all the components of a study in order to appropriately respond to the research questions. This research utilizes a qualitative case study methodology since it will enable an in-depth inquiry into the lived experiences, attitudes, and professional development (PD) requirements of mountain guides (MGs) working within the Kinabalu UNESCO Global Geopark. Qualitative research is well adapted to settings in which the aim is to create a deep, interpretive grasp of intricate social phenomena, as is the situation at hand with the distinctive roles, challenges, and aspirations of MGs within a protected area of major cultural and environmental importance. A qualitative method was chosen over quantitative or mixed-methods designs because of the exploratory and subjective nature of the research aims. In contrast to quantitative research that desires to test hypotheses based on quantifiable data, this research seeks to obtain nuanced accounts and perspectives that cannot be captured well with structured surveys or statistical analysis in isolation. In addition, mixed methods were not selected because the emphasis of this study is to prioritize participant voices, their personal and professional growth trajectories, and subjectively understand their experiences in detail, as advocated by Liamputtong (2020) (Liamputtong, 2020). A qualitative approach allows for context-specific interpretation wherein meaning is jointly constructed between participants and the researcher and informed by the interpretivist paradigm. Interpretivism stresses discerning people's meanings in their social contexts (Braun et al., 2021). With this philosophical stance, the study values the varied backgrounds, reasons, and aspirations of Kinabalu mountain guides, recognizing that their experiences are contextualized within their cultural, historical, and natural environments. Reflexivity by the researcher is also a requirement, as it demands sensitivity to how individual biases or assumptions may affect data interpretation (Aspers & Corte, 2019).

Sources of Data

The research used multiple data sources to guarantee richness, depth, and credibility of findings through triangulation. Main data were collected primarily through semi-structured interviews, which enabled the participants including mountain guides, Geopark management staff, trainers,

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and selected climbers to express their own stories, challenges, aspirations, and views on professional development opportunities. The interviews were structured to explore below the surface level, allowing participants room to respond openly in their own voice. Secondary data sources comprised direct observations of training sessions, workshops, and empowerment activities conducted within the Kinabalu UNESCO Global Geopark. Observations allowed the researcher to make observations on participant interest, trainer style, and the real-world application of PD initiatives. Documentary data were further scrutinized using reports, policy guides, training manuals, and other applicable institutional documents accessible via Geopark management and nearby libraries. Secondary data sources supplemented interview results with contextual anchoring and background information on existing empowerment projects and government policies regarding MG professional development.

Data Management Process

Handling gathered data was systematic and organized to ensure consistency, transparency, and reliability. Interviews were audio recorded with participants' consent and transcribed verbatim to ensure the retention of authenticity of responses by the participants. Field notes gathered during observations were compiled and arranged based on events, participants, and emergent themes. Documentary information like policy documents and training manuals were catalogued and referenced systematically so that the data could be easily retrieved during analysis. All transcribed data, document passages, and field notes were exported into NVivo software to ease coding. NVivo offered the technological backing required to manage high amounts of qualitative data and enabled the researcher to develop relationships among codes, categories, and themes. The software also facilitated the simple tracking of coding choices, thematic saliences, and recording of analytic memos during the course of the study, hence enhancing the dependability and auditability of the research procedure (Saldana, 2018).

Research Process Flow

The research process had a systematic sequence starting from problem identification and the development of a research objective. This was followed by participants' recruitment through purposive sampling, with an assurance that the people selected had relevant experiences or roles concerning MG PD within the Kinabalu UNESCO Global Geopark. Once participants were recruited, data collection was done through interviews, observation, and document examination. After data collection, transcription, coding, and thematic analysis were conducted by constant reference to empowerment and professional development theoretical frameworks. The last step comprised synthesis, interpretation, and validation of findings by using member checking, triangulation, and audit trail to maximize trustworthiness. While not visually displayed herein, an illustration of the research process by flow chart would generally feature the following order:

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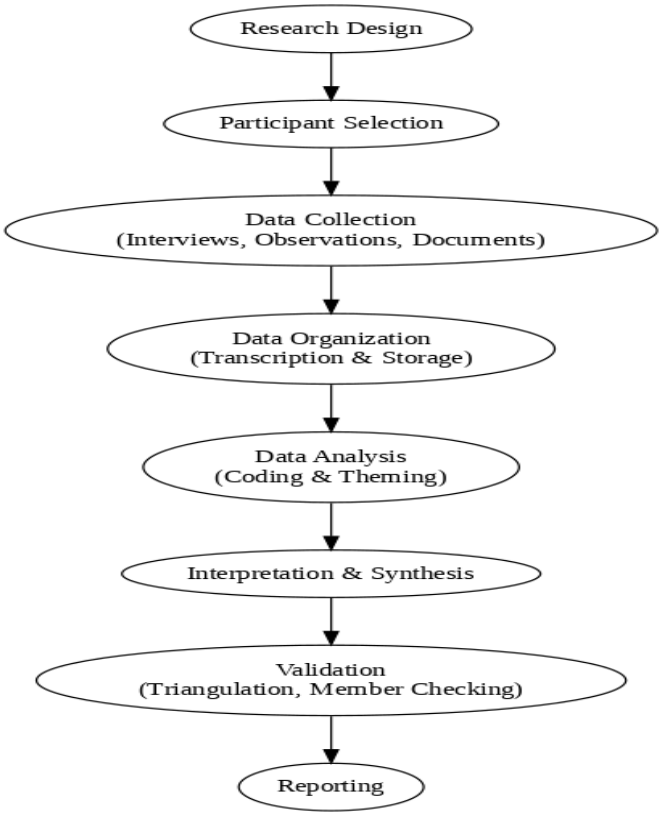

Figure 1: Research Framework

Technique of Analysis

The method of analysis used in this study was mainly thematic analysis using Braun and Clarke's (2006) six-phase model. These were processes of familiarization with the data, initial code generation, searching for themes, reviewing themes, defining and naming themes, and lastly producing the report. All interviews and documents were read through several times to achieve immersion and acquaintance prior to coding. Coding entailed searching for applicable quotes of information and grouping them into substantive units that fit the purpose of the research. The process was both inductive, in terms of creating insights from the data, and deductive, based on existing theories of empowerment and PD. NVivo computer software made this easier by giving a structured framework of coding, enabling proper storage and comparison of codes within datasets. Themes were formulated through repetitive patterns, collective participant experiences, inconsistencies, and novel insights. These themes were subsequently tested for coherence and congruence, confirming that they reflected the data meaningfully and representatively. Methodological techniques like triangulation were utilized to enhance the rigor of analysis, with evidence from interviews, observations, and documents used to support findings. Further, member checking was employed, where the participants were requested to go through the initial interpretations for checking on accuracy and authenticity (Nassaji, 2020).

The last stage of analysis entailed interpreting the themes against existing frameworks of professional development and empowerment. In this way, the study not only responded to research questions but also contributed theoretically to knowledge about PD practices among mountain guides in protected areas. Overall, this research approach offered a rigorous,

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systematic, and contextually-informed framework for investigating the professional development needs of Kinabalu Geopark guides in such a way that their voices and experiences were represented and meaningfully interpreted.

Findings And Discussion

Interviews with MGs in the Kinabalu UNESCO Global Geopark exposed numerous important PD requirements. To address this research topic, management and climber's perspective, experience, and expectation from the MG, have been considered. Thus, this part offers three hierarchical notes or layered format organised topics from thematic analysis mountain guide perspectives, KUGG management perspectives, and climber's points of view.

Hierarchical Notes Of Mountain Guides Perspectives, Experiences And Expectations For Mountain Guide Professional Development

Table 1 presents six themes generated from MGs data which are all important concerns to be taken for their PD. These six themes consist of Language and Communication Barriers (1), Lack of Funding and Financial Support (2), Outdated Resources and Technology (3), Lack of Structured Programs and Support Systems (4), Limited Access to Research and Data (5), Dealing with Unexpected Weather (6).

Table 1: Hierarchical Notes Of Mountain Guides And Their Description Related To Professional Development Needed By Mountain Guide

Hierarchical names	Description
Language and Communication Barriers	Adequate resources and personalized training for language skills and interpretation services are needed to enable guides to communicate effectively with a diverse range of visitors and provide personalized guiding experiences. Example case statements "*diverse participant expectations demanding effective communication" (Participant No.4)* "*effective communication to keep participants engaged*" *(Participant No.6)* "*Clear communication for timely response" (Participant No.36)* *"Limited resources for language training" (Participant No.7)* *"Lack of comprehensive training for language diversity" (Participant No.22)* *"Insufficient support for language interpretation services" (Participant No.36)* "*obstacles related to communication in diverse groups" (Participant No.39)*
Lack of Funding and Financial Support	Mountain guides need increased funding and financial support for workshops, training programs, conservation initiatives, geological research, interpretive signage, technology upgrades, marketing campaigns, and specialized safety training to enhance their professional development and effectiveness. Example case statements "*Lack of funding for workshops" (Participant No.1)* *"Insufficient financial support for training programs and conferences" (Participant No.5)*

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Hierarchical names	Description
	"Inadequate funding for conservation initiatives" (Participant No.12) *"Limited funding for geological research expeditions" (Participant No.17)* *"Insufficient funding for interpretive signage" (Participant No.20)* *"Inadequate funding for geological conservation efforts" (Participant No.23)* *"Limited financial support for technology upgrades (Participant No.24)* *"Inadequate funding for marketing campaigns" (Participant No.28)* *"Limited support for on-going professional development" (Participant No.29)* *"Lack of funding for specialized safety training" (Participant No.30)*
Outdated Resources and Technology	Guides require updated geological reference materials, advanced interpretation technology, modern visitor center facilities, accurate mapping resources, an updated online presence, interactive mobile applications, and reliable communication infrastructure to improve their capacity to provide high-quality educational experiences. Example case statements "*Absence of updated geological reference materials" (Participant No.2)* *"Limited availability of advanced technology for interpretation" (Participant No.3)* *"Outdated visitor center technology" (Participant No.11)* *"Outdated mapping resources" (Participant No.18)* *"Outdated website and online presence (Participant No.27) "* *"Limited financial support for interactive mobile applications" (Participant No.38)* *"Outdated communication infrastructure" (Participant No.39)*
Lack of Structured Programs and Support Systems	The establishment of structured mentorship programs, environmental education programs, knowledge-sharing platforms, career advancement paths, scientific collaborations, and community engagement initiatives is essential for the professional growth and skill development of mountain guides. Example case statements *"Absence of a structured mentorship program" (Participant No.6)* *"Lack of a dedicated environmental education program" (Participant No.10)* *"Absence of a central platform for knowledge-sharing" (Participant No.14)* *"Lack of a platform for showcasing guides' achievements" (Participant No.19)* *"Absence of a mentorship program" (Participant No.21)* *"Lack of a career advancement path" (Participant No.25)* *"Insufficient support for scientific collaborations" (Participant No.26)* *"Lack of support for collaborations with cultural organizations" (Participant No.31)* *"Absence of a mentorship program for guides (Participant No.32)* *"Inadequate support for trail maintenance" (Participant No.33)*

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Hierarchical names	Description
	"Limited resources for organizing environmental education programs" (Participant No.34)
Limited Access to Research and Data	The creation of a dedicated research center, a central repository for geological data, and funding for research on local flora and fauna would provide guides with the latest scientific information and enhance their ability to educate visitors. Example case statements *"Absence of a dedicated research center" (Participant No.4)* *"Absence of a central repository for geological data" (Participant No.35)* *"Lack of funding for research on local flora and fauna" (Participant No.37)*
Dealing with unexpected weather	Mountain guides have to cope with unexpected weather changes, including safety concerns from extreme temperatures and precipitation, limited accuracy in weather forecasting for mountainous terrain, the rapid onset of adverse conditions, navigational difficulties due to poor visibility, managing client comfort and morale, and ensuring adequate equipment and communication tools to mitigate weather. Example case statements *"unexpected weather changes while ensuring the safety and enjoyment" (Participant No.1)* *"regular updates on weather and trail conditions" (Participant No.3)* *"unexpected weather challenges stood out, demonstrating their coordination" (Participant No.4)* *"changing weather conditions, implementing adjustments" (Participant No.8)* *"unforeseen circumstances, such as sudden weather changes" (Participant No.12)* *"varying weather conditions for the safety of participants" (Participant No.18)* *"with unexpected weather changes affects the dynamics" (Participant No.20)* *"unforeseen circumstances like sudden weather changes" (Participant No.37)*

As depicted in the Table 1, the respondents revealed specific issues in term of language and communication, which mountain guides working at the Kinabalu UNESCO Global Geopark experience. Sufficient resources and personalized training are needed for MG development. This is evidenced by the need identified by the participants in their concern in regard to the communication aspect for meaningful participation to occur, managing the participants' expectations and timely response. But the language training and particularly interpretation services are insufficient and not very developed.

MGs at Kinabalu UNESCO Global Geopark also face significant challenges due to inadequate funding and financial support. They highlighted the necessity for increased funding to facilitate workshops, training programs, conservation initiatives, geological research, interpretive signage, technology upgrades, marketing campaigns, and specialized safety training. For

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instance, participants expressed the lack of financial support for attending conferences and the need for better funding for geological research expeditions and conservation efforts.

Such financial constraints limit their capacity to develop their competency in guiding and guaranteeing safety and educational value for guests. The MGs' obsolete tools and technology are another main issue for them. They underlined the need of modern visitor centre facilities, updated geological reference materials, sophisticated interpretation technologies, accurate mapping resources, and better online presence. According to guides, the current visitor centre technology and communication system are out-of-date and that interactive mobile apps and updated geological data are desperately needed to improve their potential to offer climbers top-notch educational opportunities. The restricted availability of these materials limits their capacity to remain current with technical improvements and best practices in guiding.

Professional development for MGs at Kinabalu UNESCO Global Geopark is seriously hampered by the lack of organised programs and support structures. Established mentoring programs, environmental education campaigns, knowledge-sharing platforms, job promotion paths, scientific partnerships, and community involvement projects were highlighted by guides as needing. Participants pointed out inadequate support for career development and partnerships with cultural and scientific organisations as well as the absence of a centralised forum for information sharing and presentation of successes. Using these organised initiatives would improve their guiding qualities and help to enable ongoing PD. MGs cannot provide visitors accurate and useful advice without access to current research and data. The guidelines underlined the need of a central repository for geological and environmental data as well as of a specialised research centre. They also underlined the need of financing for studies on local flora and fauna to maintain their present understanding. Lack of such tools limits their capacity to tell guests about the most recent scientific discoveries pertinent to the particular surroundings of the Geopark and educate them properly. Enhanced access to data and research would enable guides with the knowledge required to provide top-notch instructional trips.

At Kinabalu UNESCO Global Geopark, mountain guides often struggle with erratic weather conditions. Against harsh temperatures, precipitation, and fast changing weather, guides must guarantee client comfort and safety. Participants said they needed accurate weather forecasts, dependable communication systems, and enough gear to properly handle unanticipated weather changes. Ensuring the safety and pleasure of guests depends on one being able to negotiate and adjust to these circumstances. Improved resources and preparedness to handle weather-related obstacles would greatly improve the guides' capacity to effectively and safely run trips. The professional development needs of MGs in Kinabalu UNESCO Global Geopark highlight the complex skill, resource, and systemic improvement requirements to raise the guiding profession towards modern norms. The analysis of this study exposes several significant problems ranging from inadequate access to resources and training to poor communication. All of these affect the ability of the guide to offer the visitors significant, first-rate experiences. The observations draw attention to the particular challenges mountain guides in this particular UNESCO area experience, both in line with and against the body of existing studies. The main result of the study is the need of linguistic barriers and communication. Many MGs find it difficult to properly interact with foreign visitors because of their poor language competency and lack of interpreting instruction. This outcome complements the results of Ap and Wong (2001), who underline that the tourism sector depends on language ability since it helps tour guides to close cultural barriers and improve the tourist experience. Previous research has,

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however, mostly focused on how language competency might boost tourist enjoyment; this study unequivocally links the professional influence of the tour guide. Inaccurate communicators cannot satisfy the needs of visitors, thereby hindering their professional growth and the value that their offerings bring about. Particularly in languages that are widely spoken by climbers from other countries, specialised language training programs are required to close this disparity.

Nonetheless, recent studies by Clivaz and Langenbach in 2020 indicate that a guide training program should include intercultural communication skills. Lack of funds and resources for professional development is another major outcome since it limits access to training courses, modern equipment, and up-to-date reference books; effective communication requires more than just language use; it also requires cultural sensitivity and adaptability, two traits especially important in the context of a Geopark where a variety of visitor backgrounds are common. This outcome supports the allegation made by Carvalho et al. (2024) that a lack of institutional and financial support usually hinders the professionalisation of tour guiding. The special status of UNESCO Global Geoparks sometimes requires higher professional requirements due to the double purpose of conservation and sustainable tourism, therefore this study adds a fresh angle on how this shortage of resources particularly influenced the guide operating within these areas. With an eye towards guiding on the newest technology for environmental education and geological interpretation, this shows the need of making strategic expenditures in training programs and infrastructure. Recent studies by Chan and Abd. Ghanib (2023) which show that the use of interactive technology and digital tools considerably increases the educational value of guided tours further corroborate this. It also implies that beyond guide performance, meeting the larger conservation and educational goal of the Geopark depends on managing resource constraints. Another element is the dearth of official support systems including chances for career development and mentoring. This is in line with earlier studies by Chan and Abd. Ghanib (2023), which observed that tour guide professional development, was informal and usually ad hoc. The most recent studies, however, emphasise how well-organised mentoring programs enable MGs create long-term careers, therefore going one step further. Especially in environments as demanding as Kinabalu, access to knowledge-sharing and mentoring helps advice in negotiating these difficult tasks. Emphasising the requirement of peer learning and continuous professional development to increase work satisfaction and performance, recent human resource development studies as the one by Dousin et al. (2022) support this. Establishing mentorship programs can thus be considered as a wise way to address talent shortages and produce a more educated and cohesive guiding society. The summary of the findings shows below.

Table 2: Summary Of The Findings

No.	Theme	Summary of Key Findings	Supporting Data (Participants)
1	**Language and Communication Barriers**	Lack of structured language and interpretation training for effective interaction with diverse visitors.	Participants 4, 6, 7, 22, 36

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2	**Lack of Funding and Financial Support**	Insufficient funding for training, conservation projects, technology updates, and professional participation.	Participants 3, 9, 10, 12, 29, 33, 38
3	**Outdated Resources and Technology**	Visitor centers, mapping resources, online platforms, and interpretation technologies are outdated.	Participants 3, 11, 18, 27, 38, 39
4	**Lack of Structured Programs & Support Systems**	Absence of mentorship programs, career pathways, environmental education, knowledge-sharing platforms.	Participants 6, 10, 14, 19, 21, 25, 31, 32, 34
5	**Limited Access to Research and Data**	No central repository for geological, ecological data; inadequate research funding for flora and fauna studies.	Participants 4, 35, 37
6	**Dealing with Unexpected Weather**	Weather unpredictability challenges MGs' ability to ensure climber safety and comfort; limited preparedness.	Participants 1, 3, 4, 8, 12, 18, 20, 37

This study also shows that MGs in PD are realising more and more the need of environmental preservation and sustainability. The guides, who are supposed to be environmental stewards, should inform visitors on the ecological value of the Geopark and sustainable living. This is in line with the views of Ariffin and Ching (2019), who argued that tour guides are crucial in motivating visitors to adopt sustainable travel behaviours and to increase their degree of environmental awareness. Still, the new study presents a more complex picture by stressing the requirement of specific training in these fields. Apart from their great skills in environmental interpretation, the guides also have to have a basic understanding of environmental concepts and be able to communicate complex ecological ideas to several audiences. Training courses must be especially tailored to fit the demands of combining sustainability education with practical guiding skills if guides are to properly combine their roles as educators and conservationists. Training on sustainability, communication skills, resource access, and planned support networks among other professional development needs exists for MGs in the Kinabalu UNESCO Global Geopark. This study contributes to increase awareness of the specific challenges faced by MGs in the UNESCO-designated area by including these findings into the more general framework of the corpus of existing research. Geopark management and outside partners would have to cooperate to provide targeted training courses, increase resource funding, and establish mentoring and career development initiatives to address these needs. Apart from improving MGs' professional competency, these activities could help the Geopark to fulfil goals related to sustainable tourism and environmental preservation.

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Conclusion

This research examined the professional growth and empowerment of mountain guides in the Kinabalu UNESCO Global Geopark. The research examined mountain guides' development and ability to give outstanding services owing to their work environment. Further analysis found that guides have a wealth of knowledge to share with customers. However, PD programs should concentrate on improving their skills, self-confidence, and work satisfaction. Advanced safety training, leadership development, communication skills, and sustainability awareness are areas for growth. All of these are essential for guides to meet the business's growing demands, especially in balancing economic growth and environmental protection. It also stressed the need for a systematic empowerment strategy that stresses continual learning, peer support, and cooperation between MGs and stakeholders including park authorities and locals. Making quality training widely accessible, offering constant mentoring, and enabling career development opportunities to support guides in their professional and PD pursuits were the most significant measures. The research gave important insights on improving MGs' training and equipment to deliver good service. This will benefit the climbing community and contribute to Geopark sustainability. Due to its geography-focused focus and lack of long-term data, validation and calibration across a number of situations and geographies need additional research. This research establishes a strong framework for professionalizing mountain guides and ensuring their continued role in sustainable tourism despite resource and strategy shortfalls.

This research effectively investigated in the Kinabalu UNESCO Global Geopark the professional development requirements and empowerment tactics of mountain guide (MGs). Examining the viewpoints, experiences, and expectations of MGs about their professional development within the framework of their guiding duties was the major aim. By means of meticulous data collecting and thematic analysis, the study was able to identify the main difficulties experienced by the MGs, namely with relation to communication skills, limited financial support, antiquated technology tools, absence of organized support systems, limited access to research, and the complexity of handling erratic weather. By doing this, the study successfully fulfilled its aim of offering a thorough knowledge of the areas of professional growth lacking and possible solutions for them. The results show that while the MGs have great experience to offer with tourists and climbers, institutional and resource-related obstacles restrict their ability to provide premium services. The study also fulfilled its goal of providing useful advice to enable MGs' competencies match the rising demands of sustainable travel and environmental preservation in the Geopark.

There were certain limits that had to be recognized even if the research succeeded in reaching its goals. The study's limited geographic focus which focussed only on Kinabalu UNESCO Global Geopark was one of the primary restrictions. Consequently, the results could not entirely capture the experiences or difficulties of MGs employed in other UNESCO Global Geoparks or mountain tourist sites. Moreover, the research was cross-sectional, meaning it just caught a moment of view of MGs at one point in time instead of following modifications or advancements over a longer period. The participant scope presented yet another restriction. Although the MGs themselves produced rich qualitative data, the research would have benefited from more direct interaction with other stakeholders including park authorities, local community leaders, and tourism agencies to offer a more comprehensive picture of the institutional elements influencing MG professional development. These restrictions signal that further study is required to expand on this basis, not that the conclusions of the study are invalid.

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Particularly regarding the sustainable growth of mountain guiding as a profession, the results of this research have various significant consequences for both policy and practice. Above all, the findings underline how urgently organized, well-funded, and ongoing professional development initiatives catered to the particular situation of MGs employed inside UNESCO Global Geoparks are needed. These initiatives should stress enhanced safety training, leadership development, multicultural communication, environmental interpretation, and sustainability consciousness. The studies underline even more that MGs are environmental stewards as well as service providers who are very important in teaching guests about responsible travel and conservation. Dealing with the resource limitations found such as obsolete technology and inadequate access to research materials can greatly improve the quality of guided experiences and help to reinforce the Geopark's reputation for excellence. By means of mentoring programs, career promotion prospects, and peer learning campaigns, empowering MGs also enhances their professional happiness and retention in the guiding field. In the end, the results show that funding MGs' professional development not only helps them personally but also advances the more general objectives of sustainable tourism and conservation in the Kinabalu UNESCO Global Geopark.

Recommendations And Future Research

The relationship between external environmental factors and mountain guide professional progress should be studied further. The climbing sector is dynamic, and climate, tourism, and economic factors affect it. The research may examine how external influences change mountain guide tasks and how training programs might adapt to new difficulties. Due to climate change, severe weather events are projected to increase, requiring guides to get risk assessment and crisis management training. Tour guides will also need to know how to promote sustainable tourism and teach climbers about conservation as it grows. Another exciting topic for future research is how different training approaches help mountain guides improve professionally and personally (Bidul, 2022). The present research suggests extensive training; however it does not evaluate the relative efficacy of existing delivery methods. Research the pros and cons of blended learning, hands-on workshops, and online courses to find the best way to fulfill MGs' different needs. Online courses are affordable and accessible, but hands-on training on navigation or first aid may be more useful. Research may be reinforced by linking it to implementable policies and activities. The professional certification system for mountain guides might standardize training and ensure sector-wide excellence. Climber authorities, training institutions, and industry participants may provide such accreditation in return (Elfithri et al., 2021). Communication, risk management, and environmental sustainability might be organizational core capabilities. Guides who have been certified should be recognized for their work to create an incentive. Incentives may include better job prospects or pay. Mentorship might also be institutionalized as part of MG professional development. This discovery might transform PD and empower mountain guides. Resolving the study's flaws and incorporating its recommendations into policies and programs may achieve this. Next-generation research should include longitudinal designs, multiple training methods, and additional stakeholder perspectives. When this is done, scholars and politicians may create solutions that are durable, useful, and adaptable to the guiding sector's needs. Thus, MGs will be better able to address professional concerns, improving their working conditions and climbers' experiences.

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