

Lumber Industries in CARAGA Region During the Post-Pandemic Era: A Phenomenological Analysis

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ABSTRACT

This study investigates how operators and managers navigated the uncertainties of the post-pandemic era, drawing from their lived experiences to understand patterns of resilience, adaptation, and hardship. Using Interpretive Phenomenological Analysis (IPA), twelve informants provided insights that exposed deeper realities within the industry. Findings revealed three core themes: a critical decline in wood supply largely due to shifts in farming practices; unstable supply-demand dynamics worsened by high labor and input costs; and minimal government intervention to support recovery efforts. Many owners reported being left to manage the burden alone, with no structured assistance from either national or local agencies. Others pointed to labor shortages and reduced profitability as compounding factors that further weakened operations. The study underscores how structural gaps in public administration and economic planning have left micro, small, and medium enterprises (MSMEs), specifically the lumber sector is vulnerable in crisis recovery. More than just outlining the challenges in the lumber industry, the study advances a resilience framework that emphasizes the importance of coordinated government support, financial literacy, sustainable resource strategies, and targeted livelihood programs. The experiences shared by the informants present a compelling case for policy reform and collaborative governance, especially in resource-based regions like Caraga. While the pandemic exposed the fragility of this sector, it also revealed an enduring determination among stakeholders to persevere. The lived experiences documented in this study offer lessons not just in survival but in the urgent need to build systems that support more resilient, adaptive, and inclusive local economies.

Keywords: lumber industries, post-pandemic, Caraga Region, phenomenology, public administration, MSMEs resilience.

INTRODUCTION

The lumber industry sector is a vital part of the local economy that faced significant difficulties following the pandemic. The COVID-19 pandemic disrupted the operational and financial stability of these lumber industries, leading to closures and decreased productivity. Despite their importance to the regional economy, many lumber industries have struggled to adapt to new economic realities, raising concerns about their future viability (Qamruzzaman et al., 2021; Leso et al., 2022). The problem is worsened by the lack of targeted policies and financial support from local government units, national agencies, and other stakeholders, which further hampers their recovery efforts (Qamruzzaman et al., 2021).

The post-pandemic situation in the Caraga region has unexpectedly impacted the national and international economy. It hurts economic activities and people's livelihoods, particularly health, business, and transportation, in small and medium enterprises (Tesso, 2020). From October 2020 to December 2021, the Department of Environment and Natural Resources recorded that there were 94 wood processing plant operators, whose operations shut down in the Caraga region, yet to recover, brought about by exogenous shocks due to the COVID-19 pandemic. Despite the shock, the lumber industry held onto highly tuned out workers. About 65% of lumber industries adjusted payroll by reducing hours, wages, or granting leave. Because of these adjustments, only 11% of lumber industries laid off workers. Policy support is weak where it is needed most: 6 in 10 industries in low-income owners did not receive any public support, and lack of awareness is the main obstacle to accessing support on fiscal resources in lumber industries and commerce associations, and lack of government support from the local and national government agencies through public and private partnership.

While there has been substantial research on the impact of COVID-19 on SMEs globally (Brammer et al., 2020; Donthu & Gustafsson, 2020), there is a significant gap in the literature regarding the specific experiences and

challenges faced by the lumber industries in the Caraga Region. Most studies have not delved into the lived experiences of lumber industry stakeholders during the post-pandemic period, leaving a critical gap in understanding the adaptive strategies and resilience of these businesses. This study addresses this gap by employing interpretative phenomenological analysis to explore the nuanced experiences of those within the lumber industries, offering insights into the factors that have shaped their recovery and sustainability (Korber & McNaughton, 2018; Ratten, 2020; Seetharaman, 2020).

The primary investigator has spent several years working closely with the lumber industries in the Caraga Region. This experience was gained while serving as part of the workforce under the Environmental Management Bureau (EMB), where responsibilities included supporting and implementing regulatory mandates. The exposure to on-the-ground realities offered the researcher a deeper understanding of how these industries operate, especially within the context of environmental compliance and local economic dynamics, hence, this paper is to investigate the lumber industries in Caraga Region during the post-pandemic era that aimed to understand the lived experiences of lumber industries owners and managers to answer the questions: a) How do the lumber industries experience the post-pandemic phenomenon? b) What are the essences of these experiences? and c) What implications can be derived based on the findings of the study?

Atheoretical Stance

This study made use of the concept of bracketing as part of its methodological approach. Drawing from the interpretation of Merleau-Ponty (1962, 1964), bracketing doesn't mean shutting the world out or turning inward to pure thought. Instead, it's a conscious choice to hold off on theories, preconceptions, and analytical shortcuts to better encounter the lived reality of others. As Ashworth (1999) emphasized, it's about putting aside ready-made ideas so that the voices of participants on what they see, feel, and experience can come through more clearly. In doing so, the researcher remained attentive and intentional in suspending personal assumptions, allowing the data to speak with as little interference as possible. In this research, the theoretical assumptions were suspended to avoid biases.

Philosophical Assumptions

This section of the study lays out the philosophical foundations that shaped the research. It looks into several key areas: how reality is viewed (ontology), how knowledge is understood and gathered (epistemology), the influence of values on the research process (axiology), the way language is used to present findings (rhetoric), and the overall approach taken to collect and analyze data (methodology). Each of these elements plays a role in guiding the direction and tone of the study, reflecting the researcher's stance on how meaning is constructed and interpreted within a qualitative framework, as noted by Creswell (2013). Inductive reasoning was applied in this study because observations tend to be used for inductive arguments, and the hypotheses were sometimes called a "bottom-up approach" to broader generalization and theories.

Ontological assumptions in business and management research revolved around organizations, management, and individuals' working lives, organizational events, and artifacts (Killam, L. 2013). In the study, it dwelt on understanding the lumber industries in the Caraga region. It included a flux of processes and practices that are complex and rich, socially constructed through culture and language, and subject to multiple meanings and interpretations. Furthermore, these realities contributed to the emergence of another reality on the complexities of the lumber industries in the Caraga region.

Epistemological assumptions in this study revolve around what counts as knowledge, how that knowledge takes form, and how it can be shared or made sense of. Killam, L. (2013) argued that what we accept as valid or legitimate knowledge depends largely on the context in which it's produced. In the fields of business and management, this becomes especially relevant. Knowledge doesn't just come in the form of numbers or formulas. It also shows up in written accounts, visual materials, personal stories, and even fictional narratives. Killam, L. (2013) pointed out that these varied forms, from hard data to soft interpretation, each offer something meaningful. They all have a place in shaping how we understand the world around us.

The study consisted of assumptions on adequate, valid, and legitimate knowledge of how resilient the lumber

industries in the Caraga region are. It focused on analyzing participants' narratives, stories, perceptions, and interpretations, and how those result in the resiliency of the respondents. It may have provided an in-depth understanding that explains the direct and indirect link between the many facets of the lumber industry in the Caraga region.

Axiological assumptions included value-bound research, wherein, in this study, the researcher and research participants' values affect their interpretations of the many facets of their perceptions in the workplace. According to Killam, L. (2013), it is our values that sit at the center of what we choose to do. They don't just influence us, they drive us. In many ways, they shape how we act, how we decide, and how we make sense of the world around us.

The researcher demonstrated axiological skills by articulating his values as a basis for making judgments about what research they are conducting and how they goes about doing it. The researcher did not inject any form of bias or prejudice from her personal experiences into the research participants' narrations. The research firmly abided by the Ethics Review Panel's terms and conditions, the Institutional Review Board (IRB) of the University of the Visayas.

To make the subject more relatable and easier to grasp, the researcher leaned into storytelling. The writing was shaped using a personal voice, with a tone that felt more conversational than formal. Technical terms were kept minimal, and definitions weren't overloaded. This approach reflects the study's rhetorical stance. In qualitative research like this, the goal isn't to claim absolute truth. Instead, it's to present how reality appears from the perspective of those who lived it, the participants whose voices are at the heart of the work.

Finally, in terms of the **methodological assumption**. The researcher started with a wide pool of data but gradually trimmed it down, focusing on what mattered most to the core questions of the study. The aim was to make sure the information aligned closely with the study's specific objectives, without losing the depth of what participants had shared.

It focused on how individuals come to know the world or gain knowledge about a part of it. Consequently, because the raw and contextual data were summarized into condensed form, an a priori principle was employed, which ultimately derives from an emergent theory from shreds of evidence.

Domain of Inquiry

This study explored how lumber industries in the Caraga Region experienced the pandemic and its aftermath. It focused on what they went through, the struggles they faced, the support they received (or didn't), and how they tried to recover as the world shifted from crisis toward a new kind of normal. Specifically, this study aims to answer the following questions: a) How do the lumber industries experience the post-pandemic phenomenon? b) What are the essences of these experiences? and c) What implications can be derived based on the findings of the study?

RESEARCH METHODOLOGY

Research Design

A qualitative approach, specifically Interpretive Phenomenological Analysis (IPA), was used in this study. IPA works are used when the goal is to understand how people make sense of what they have gone through, both personally and within the spaces they move in. In this case, it helped the researcher dive into the stories of lumber industry owners and managers in the Caraga Region, especially as they reflected on their experiences during the post-pandemic period.

Research Environment

The study was carried out across several provinces in the Caraga Region, where lumber industries are spread out among key municipalities. These include Butuan City, Buenavista, Magallanes, Santiago, Sibagat, San Francisco, Bunawan, Talacogon, Prosperidad, Alegria, Cantilan, and Lianga, respectively. Each site offered a unique backdrop, reflecting the geographic and economic diversity of the region's lumber industry.

Research Respondents:

There were (10) key informants in this research study, and the unit of analysis is the industries. In order to saturate the level of the data, there were 2 additional key informants on the research respondents for validation. The key informants of this study were proprietors/owners and managers, who have direct experience with the operations and were purposively selected based on their roles and expertise to ensure that they could provide valuable insights into the research questions.

Inclusion- Exclusion Criteria

Owners/Proprietors

The owners/proprietors must be currently in their role to run the business, and as one of the 10 selected lumber industries in the Caraga region. They should have at least 5 years of experience in operating their businesses. Participants needed to express a clear willingness to take part in the study and give their informed consent. Anyone who had been running their business for fewer than five years was not included. This helped ensure that the insights gathered came from those with enough experience to speak meaningfully about the industry.

Managers

The managers must be actively working and serving as one of the 10 selected informants, with a focus on the lumber industry. They should have at least 5 years or above in their current positions. They were also expected to give their consent and be open to sharing their experiences. Anyone with fewer than five years in the business was left out of the study to keep the focus on those with deeper familiarity and longer involvement in the industry.

Sampling Technique

There were 10 key informants in this research study and including 2 key informants for the data saturation principle. On the sampling techniques.

Creswell (2013) pointed out that deciding on the right number of participants is a key step when planning a study. In phenomenological research, having around ten informants is generally considered suitable. For this inquiry, the sample included a mix of owners and managers from the lumber industry. What mattered more than the number, though, was their shared background. The goal was to bring together individuals with similar lived experiences, which is central to the interpretative phenomenological approach. Homogeneity helps sharpen the focus and allows for a deeper look into how participants make sense of what they've been through. Creswell (2013) stressed that participants must have experienced the phenomenon in question for their insights to hold real weight.

Research Instrument

A self-made interview guide was used to conduct this research study. Key informants are proprietors/owners and managers. Their experiences and knowledge acquired by the researcher during the conduct of this research became valuable to this study. The self-made guide questions were validated by an expert who is exposed to the management of human resources and has acquired postgraduate degrees in the same field. The interview guide consisted of informed consent requesting that informants voluntarily participate in the study:

- Part I of the interview guide is all about the introduction and the informant's profile.
- Part II Post-Pandemic Lived Experiences of Lumber Industries in the Caraga Region:
 - a. Experiencing the Post-Pandemic Phenomenon.
 - b. Understanding the Essence of the Experiences.

Further, it degenerated responses on how the informants' lived experiences that their source of living got affected (e.g., stoppage of business operation, high turn-out of workers, and lack of fiscal administration governance due to no policies supporting from the national agencies, local government units, through private-public-partnership).

Data Collection

Informants: The study involved 10 lumber industry owners and managers from the forestry sector within the different municipalities in the Caraga region, with an additional 2 industries for validation of the saturated data. Informants were selected through purposive sampling to ensure a diverse range of experiences and perspectives.

Interviews: The researcher sat down with each informant for an in-depth, semi-structured interview. These conversations were meant to draw out detailed stories, personal accounts that revealed how each participant experienced the challenges and changes in their industry.

Data Collection Procedures

This section describes the researcher's methods in collecting the data presented according to the informants' responses in the interview guide.

The researcher began by submitting the concept paper to the Dean of the Graduate School of Business and secured approval to move forward with the study. After that, the proposal was presented during a formal hearing, where feedback from the panel was carefully noted and addressed. Once the revisions were completed, the paper was forwarded to the university's Institutional Review Board for ethical and technical review. Only after receiving the Notice to Proceed from the IRB did the researcher begin collecting data.

Pre-Data Gathering. The researcher sent a letter of informed consent to the informants to ask for their willingness to participate in the research efforts. The informants were explicitly told that the interview would run for approximately less than 60 minutes. No coercion or any form of pressure was involved, and they were made aware that they were free to withhold information or withdraw from participation at any given point in time should they wish to.

Actual Data Gathering

1. The researcher carefully followed the data collection procedures in this study to prevent `s and conflicts of interest. There are times when a situation doesn't seem like a problem at first, but it can gradually turn into a real conflict of interest. What starts as a small overlap, personal or professional, might later affect how decisions are made or how findings are interpreted

2. The researcher set the time for a telephone interview depending on the informant's agreed availability. The researcher made the interview guide to check and affirm the responses of the informants.

3. The estimated average duration of an interview is less than one (1) hour per informant. Once the informant had been informed about the schedule, the interviewer gave them a call to begin the data collection. The process was kept simple and direct, allowing the conversation to unfold naturally. The interview was recorded and transcribed. To ensure the credibility of the transcribed responses, member checking was accomplished, and informants confirmed the accuracy of the transcription by attaching their signatures.

4. Study informants had the right to expect that the data they provided would be given the utmost privacy, confidentiality, and security.

Confidentiality is when any personal information shared by the informant to the researcher is not divulged to any other parties without the data subject's documented consent. Additionally, an enumerator was commissioned to interview the informants utilizing the interview guide in this study.

Post Data Gathering

1. All data were gathered through (voice/audio recording, with notes) during the telephone interview.
2. The researcher's data collated will be transcribed and analyzed the data from the phone interview and maintained, identifying information in a locked/secured file.

3. The researcher restricted access to identifying information to only a few people on a need-to-know basis.

4. The researcher entered no identifying information into computer files.

5. All informants who participated in the study were given copies of their responses to verify the accuracy of the transcription.

6. The researcher destroyed identifying information as quickly as possible.

Data Analysis

The collected data were transcribed verbatim and analyzed using the IPA approach, following these six steps:

Reading and Re-reading: The researcher was immersed in the data by reading and re-reading the interview transcripts to become thoroughly familiar with the content.

Initial Noting: Detailed notes were made on the transcripts to capture initial thoughts, observations, and reflections. This step involves three types of comments: descriptive (focusing on the content), linguistic (focusing on the use of language), and conceptual (focusing on the broader concepts and interpretations).

Developing Emergent Themes: The researcher identified and noted emerging themes from the initial notes, looking for patterns and connections within the data. These themes represent significant aspects of the informants' experiences.

Searching for Connections Across Emergent Themes: Themes will be organized and clustered to identify relationships and patterns. This step involves looking for higher-order concepts that link the emergent themes together, forming a coherent structure.

Moving to the Next Case: Steps 1-4 were repeated for each participant's transcript, treating each case individually while being open to new themes and patterns that may emerge.

Looking for Patterns Across Lumber Industries: The final step involves identifying patterns and themes that are consistent across multiple informants. The researcher looked for commonalities and divergences in the experiences, drawing conclusions that reflect the collective essence of lived experiences.

Trustworthiness Strategies.

The study ensured trustworthiness through triangulation of data sources, maintained an audit trail for transparency purposes, and provided thick descriptions for transferability and member checking to validate findings (Connelly, 2016).

Twelve (12) key informants, who are composed of owners and managers of lumber industries, were purposely selected to share their lived experiences during the post-pandemic era in the Caraga Region. Key informants were personally visited, negotiated on the agenda of the study was negotiated. An informed consent document was executed by key informants, ensuring voluntarily key informants of the same. The schedules of individual in-depth interviews were agreed upon based on the convenience and availability of the key informants, and the duration varied from one key informant to the other. Data or thematic saturation were utilized in determining the sample size of the study. Saturation is an essential research principle in determining the adequacy of the purposive sample in a qualitative investigation where in the process of gathering information. In this study, data or thematic saturation was achieved in the ten (10) key informants. Triad, audit trail, thick and rich description, and member checking were employed as strategies for enhancing the trustworthiness of this study. The individual unstructured in-depth interviews were recorded, transcribed verbatim, and analyzed. Appropriate strategies were also employed to ensure the ethical compliance of this study concerning the principles of beneficence and non-maleficence, justice, and transparency.

Ethical Consideration

Before conducting the study, the paper was submitted to the university's research ethics committee for technical and ethical review. Moreover, it was approved, and the notice to proceed certificate was given with reference number **NTP-2025-PHD-004**.

RESULTS AND DISCUSSIONS

The lumber industries whose operations were shut down in the Caraga region are yet to recover, brought about by exogenous shocks due to the COVID-19 pandemic, in which from October 2020 to December 2021, the Department of Environment and Natural Resources recorded that there were 94 wood processing plant operations were stopped. Despite the shock, the lumber industry held onto highly tuned out workers. About 65% of lumber industries adjusted payroll by reducing hours, wages, or granting leave. Because of these adjustments, only 11% of lumber industries laid off workers.

Policy support is weak where it is needed most: 6 in 10 industries in low-income owners did not receive any public support, and lack of awareness is the main obstacle to accessing support on fiscal resources in lumber industries and commerce associations, and lack of government support from the local and national government agencies, and other financing institutions support through public and private partnerships.

This study was conducted in the Caraga Region, whose lumber industries are strategically located in the different municipalities. There were (10) research informants in this study, and the unit of analysis is per industry; an additional 2 key informants for validation to reach the level of data saturation. The key informants of this study were operators/owners and managers, who have direct experience with the operations and were purposively selected based on their roles and expertise to ensure that they could provide valuable insights into the research questions. Those less than 5 years in the business are excluded from the study. Three major themes were discussed (1) a significant decrease in the wood supply from the major sources resulting in low production, (2) Supply and demand issues resulting in to decrease in profit, and (3) Gaps in government programs and support for the lumber industry. One of the prime reasons for the decrease in wood supply is the sudden shift of the farmers in their crop activities and other economically valuable activities, considering the changes in human dynamics during the pandemic. On supply and demand are induced by high labor and input costs, operators/owners are forced to decrease the number of workers due to lower net gains. On the gaps, there is no government support and financing institutions' support that pave the way for the economic convergence of all affected stakeholders to withstand the lumber industry's resilience.

Profile of the key informants from the different municipalities in the Caraga region, who participated in the study, the coding, themes, and interview transcription are imperative to the study.

Description of the Informants

Table 1. Sociodemographic characteristics of Informant

Sociodemographic characteristics of informants

Sociodemographic Characteristic	Managers		Owners/Proprietors		Overall	
	Count	Percent	Count	Percent	Count	Percent
Gender:						
Male	3	50%	2	33%	5	42%
Female	3	50%	4	67%	7	58%
Age (in year)						
Below 26	0	0%	0	0%	0	0%
27-60	6	100%	2	33%	8	67%
Over 60	0	0%	4	66%	4	33%
Marital Status						
Single	2	33%	0	0%	2	17%
Married	4	67%	4	67%	8	67%
Separated	0	0%	0	0%	0	0%
Widow	0	0%	2	33%	2	17%

Number of children						
0	2	33.33%	0	0%	2	17%
1-2	2	33.33%	2	33%	4	33%
3-4	2	33.33%	3	50%	5	42%
5 above	0	0%	1	17%	1	8%
Education						
College level	0	0%	2	33%	2	17%
College graduate	6	100%	4	67%	10	83%

Table 1 presents a total of twelve (12) informants who voluntarily participated in the study. Six (6) informants were managers, and the other six (6) informants were owners/proprietors from lumber industries.

The sociodemographic characteristic of the informants the data collected show that: there were 5 males and 7 females participated in the study that corresponded to 42% and 58% respectively; 8 or 67% of the informants on 27-60 age bracket who participated in the focus group discussion and interview; 8 or 67% of the informants were married, and 5 or 42% had an average 3-4 children; and, 10 or 83% of the informants were college graduates.

All informants were carefully informed of their rights to privacy and confidentiality. Before the interview, each informant agreed and signed an informed consent indicating the procedure and protection. All physical and electronic files were kept and saved in a secure folder and will be destroyed at the end of the required period.

The study drew from the accounts of twelve informants. Each one took part in a one-on-one interview. These conversations were recorded and later transcribed in full. After transcription, the researcher used the constant comparative method, as outlined by Glaser and Strauss (2017), to analyze the data and draw out patterns across responses.

The process of analyzing the data went hand in hand with its collection. As interviews came in, the researcher began sorting through them, coding responses while the voices and stories were still fresh. Open coding was used to spot recurring ideas, pieces of everyday life that kept showing up across accounts. These themes weren't just taken at face value; they were looked at in context, shaped by how people spoke about their own lives during the post-pandemic period. Patterns began to emerge. Some were subtle, others more obvious. Early rounds of coding helped shape where to look next, refining both the data collection and the interpretation that followed. In time, similar codes were pulled together and grouped into categories that reflected both the shared and contrasting parts of the participants' experiences.

On developing the themes and sub-themes, the data were gathered from the 12 key informants who voluntarily participated in the study. The questions were asked in the Cebuano dialect for the informants to better understand and respond to the queries. The interview was recorded after permission from the participants was sought. The interview was then transcribed and translated into English. A member checking was performed before the researcher proceeded with coding and thematic analysis. Essential results are presented according to the sequence of the problem statements or research objectives, in which it has developed several thematic areas have been developed, representing the experiences of the said lumber industries through the informants.

Table 2. Emergence Relevant Thematic Areas

Emergence of relevant thematic areas describing the experiences of the lumber industries in the recovery journey to post-pandemic era.

THEMES	SUB-THEMES	CODES
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1. Significant decrease in wood supply from major sources resulting in low production	Changes in the crop activities among farmers	Lack of interest among prime suppliers of wood, Shifting to agricultural activities, Unstable sources of wood, Low supply of wood
2. Supply and demand issues resulting to decrease in profit	High labor fees and high fees in the machineries	Lower values of lumber products by the buying companies, Low buying costs
3. Gaps in government program and support for lumber industries	Lack of external support or assistance in the recovery process	Lack of support from LGU, No assistance program for lumber industries, No loan or financing program for lumber business

As reflected in Table 2, three relevant themes have emerged from the responses of the informants when it comes to their experiences along the way in the recovery process after the pandemic. While the majority have successfully risen from the extraordinary difficulties brought by the global health crisis, undeniable hardships have been encountered, as reflected in the given table. Major themes include the following: (1) Significant decrease in the wood supply from the major sources resulting in low production, (2) Supply and demand issues resulting in to decrease in profit, and (3) Gaps in government programs and support for lumber industries.

Theme 1. Significant decrease in wood supply from major sources, resulting in low production

Dealing with the first theme, which describes the significant decrease in the wood supply, this indicates serious stress in the whole supply and value chain process, as it logically implies for high cost of labor and production cost. During the interview, it was found out that one of the prime reasons for the decrease in wood supply is the sudden shift of the farmers in their crop activities and other economically value-adding activities, considering the changes in human dynamics during the pandemic. One of the interviewees said;

“Sa ako na experience, panahon sa pandemic og sa padayon pag balik sa operation, lisod jd ang pag pangita og supply sa kahoy. Kay ang mga mag-uuma nag shift man to agricultural. Ni gamay jd supply sa kahoy nga maoy resulta sa gamay nga production. Lahi rajd kadtong wala pa ang pandemia”. -Informant A [In my experience, when we started back the operation immediately following the pandemic, it was really not easy to look for sources of wood because farmers are shifting to fast-growing crops and other agricultural activities for survival. It resulted in a low supply of wood and low production. This is so different from before the pandemic happened.]

The statements from informant A reflect the situations among the farmers during the pandemic and even when quarantines are gradually lifted. During agricultural activities such as rice farming, where cattle are optimally used in cultivation, harvesting of falcata and other wood products is compromised. This is noted in the statement of an informant who said that;

“Sa panahon sa pag uma, ang mga kabaw gimamit rap ag uma, walay magamit sa falcata og kahoy. Komprimiso jd ang wood supply. Wala pd me mahimo kundi ang maghulat nalang jd kay wala may mo alsa mga kahoy gikan sa bukid, - Informant B [During rice farming, no cattle are available to carry wood products from forests. We don't have any choice but to just wait for the availability.]

Sub-Theme 1: Changes in the crop activities among farmers. The shift towards other agricultural activities is undeniably one of the major factors affecting production in the lumber industry during the post-pandemic era. This observation is noted in the study of Torres et al. (2021), lumber industries have been greatly affected in terms of wood

supply in the early years of post-pandemic operations due to the low supply of wood products from forest origin. In another study of Torres et al. (2021), it was noted that wood products from the forest sources have declined because of the transformation in the agricultural and crop activities of the farmers.

Theme 2: Supply and demand issues resulting to decrease in profit

The second relevant emerging theme raises issues on supply and demand that evidently resulted in lower profits. Such issues are induced by high labor and input costs. Reduction in the number of workers was also a problem, while lumber industry owners are forced to decrease the number of workers due to lower net gains. Unfortunately, some lumber industries were totally shut down even after the pandemic because of financial constraints (Torres et al., 2021). The said issue is aggravated by the meager buying costs from the buyer companies that are also affected by the transport and other labor costs. In one of the interviews conducted, an informant stated that;

“Maskin pa adtong pag balik sa operation after sa restriction sa Covid-19, nag reduce jd ang workers kay dili na kaya e sustain sa tag-iya. Mahal pd jd ang mga input cost kay gamay ra baya supply. Ni gamay pajd ang palit tungod daw sa mahal og lisod ang transport og gamay rap alit sa mga wood products sa market. - Informant C [Even immediately after the lifting of the restrictions from the Covid-19 pandemic, most of the lumber dealers have reduced the number of their workforce because owners felt it was very challenging to sustain. Input costs have been relatively high due to limited supply. In addition, buyer companies bid lower buying costs due to high transport costs and lower market demands.]

The statements shared by informant C speak of the negative impacts of the issues on the supply and demand, particularly in terms of a reduction in the livelihood opportunities for the community. This is explained by the fact that lumber industry owners are forced to reduce workers to retain the sustainability of profit and business sustainability. Such findings are also noted in the study of Torres et. al. (2021), which found that many business sectors, if not totally closed, have decided to cut their employees during the first year of operations following the restrictions of the pandemic.

Sub-Theme 2: Forced reduction in the number of workers. Moreover, labor shortages remain a persistent issue for the lumber industry, a challenge that has roots in both the pandemic and larger demographic shifts. The pandemic prompted many workers to reevaluate their employment circumstances, leading to an even tighter labor market, particularly in manufacturing and skilled trades (Torres et al, 2021). The lumber companies strive to ramp up production to meet ongoing demand; their ability to attract and retain a skilled workforce is critical. The combination of labor shortages and the need for upskilling workers in sustainable practices means that the industry must invest in workforce development and retention strategies.

Theme 3: Gaps in government programs and support for lumber industries

Moreover, the last theme that is extracted from the testimonies of the informants revealed the gaps in the government support or assistance program for small enterprises like the lumber industries. Unfortunately, while the lumber business has contributed significantly to revenue generation, support programs for post-pandemic recovery processes are not given attention. Business owners have to survive and take their own risks while government funds are directed to the mass administration of “ayoda” or the financial assistance for all the affected low-income households. Another informant stated that;

“So far, wala man jd ta program about loan program or support para sa lumber industry to sustain o maka recover jd balik sa operation. Risk najd sa tag iya ang mo mopadayon. Bayad man gehpaon tax kay lageh gipit pd ang panudlanan government tungod sa yoda. Maka dismaya baya gamay, pero lageh kay naa man pd ayoda. Siguro, makita n ani ba nga na pd programa para sa mga lumber industry sa pnahon sa krisis”. Informant D [“So far, there is no program about loan support for the lumber industry to recover from the pandemic. It was purely the owner’s risk to proceed and operate. Still, we are paying taxes while the government is adjusting to the budget limitation following the appropriation of

“ayoda”. Yes, I felt a little bit dismayed, but still considering the noble purpose of ayuda. Maybe, this must be seen for the creation of support programs for lumber industries, particularly in times of crisis.”]

The statements from informant D reflect the desire of the lumber industry for support programs from the government that are essential for the sustainability of business, especially during crises such as the COVID-19 pandemic. Torres et al. (2021) noted that MSMEs played a significant role in the economic development of the country by which government programs should also consider or prioritize, particularly during a crisis.

Torres et al. (2021) further stated that supply chain disruptions that emerged during the pandemic have prompted lumber companies to reevaluate their sourcing and logistical strategies. Many organizations have invested in technology and infrastructure improvements to enhance their supply chain resilience.

The need to diversify suppliers and reduce dependency on a singular source has become apparent, as reliance on just-in-time inventory systems was tested during the pandemic. Lumber companies are now exploring more robust supply chain models that include local sourcing and greater inventory management, which help mitigate risks associated with future global disruptions. Besides internal organizational measures, government support is also needed to sustain lumber industries and other enterprises (Torres et al., 2021).

Sub-Theme 3: Lack of external support or assistance in the recovery process. As the industry transitioned into the post-pandemic period, the realization emerged that while some assistance was available, the support was often not tailored specifically to address the unique challenges faced by the lumber sector (Nepal, R. 2020). This gap in targeted government support has hindered the industry's recovery efforts and ability to capitalize on the growing demand for lumber products. Hence, the findings of the study highly suggest that Local Government Units (LGUs) should consider support programs for MSMEs in the future in case of another wave of crisis.

Essence of the experiences of the lumber industries. The essence of the experiences presented in Table 1 is linked to the call for good governance, particularly in terms of support programs for all MSMEs, including the lumber industries. Especially in the Caraga region, where wood forest products are abundant, the challenges experienced by the informants imply a redirecting of government plans and programs that will also give priority to supporting the sustainability of MSMEs in times of economic crisis.

The pandemic has significantly impacted various sectors worldwide, and the lumber industry is no exception. The onset of the pandemic led to immediate disruptions in supply chains, affecting the production and distribution of lumber products. Many sawmills and lumber processing facilities faced temporary shutdowns or reduced operating capacities due to health protocols, which resulted in a decline in output (Nepal, R. 2020). As labor availability decreased due to illness and quarantine measures, the industry struggled to maintain the necessary workforce to meet demands. This contributed to a bottleneck in lumber supply, which had cascading effects on construction and related industries reliant on timely lumber availability.

Evidently, the pandemic has highlighted the vulnerability of the lumber industry's reliance on a just-in-time inventory system. Disruptions in supply chains exposed the fragility of inventory management in the face of unexpected global challenges, prompting many companies to reconsider their strategies (Nepal, R. 2020). This reevaluation may lead to changes in how companies approach sourcing and distribution, particularly as they aim to create more resilient supply chains that can better withstand future shocks.

As implied from the data, the challenges faced by the lumber industry during the Covid-19 pandemic highlight not only the immediate effects of supply chain disruptions and changing consumer demands but also the long-term implications for operational strategies. The need for a more resilient and sustainable approach to lumber production and distribution has become evident, urging stakeholders to adapt to the new realities of the post-pandemic landscape. As the industry navigates these challenges, lessons learned will shape the future trajectory of lumber supply and demand dynamics (Tesso, N., 2020).

The challenges experienced by the lumber industries imply the call-in governance, particularly when it comes to support programs for all MSMEs in times of crisis. Sustaining the lumber industry through government assistance programs will increase regional and national economic development.

Chain disruptions, which were exacerbated by the COVID-19 pandemic and have continued to affect the industry. The lumber supply chain, which relies heavily on a network of sawmills, distributors, and retailers, faced significant interruptions during the pandemic due to shutdowns, labor shortages, and transportation delays (Tesso, N, 2020). The immediate crisis of the pandemic recedes, but logistical challenges, such as freight shortages and rising shipping costs, continue to hinder the efficient movement of lumber products to market, creating tensions between supply and demand.

In the context of public administration and governance, the findings of the study clearly speak of the need for NGAs & LGUs to streamline support or assistance programs for the lumber industries in anticipation of another possibility of economic crisis in the future. The post-pandemic era has presented the lumber industry with an array of multifaceted challenges that impact production, pricing, and market stability. The challenges faced by the lumber industry during the post-pandemic era can inspire broader reflections on governance reform. The lessons learned from the interplay between public administration and the lumber sector's vulnerabilities call for a reevaluation of crisis response frameworks and the adoption of more adaptive governance strategies (Liu, K. et., al 2020).

Further, in the context of public administration and governance, specifically on forestry sector governance plays a key role in Philippine economic development. The findings of the study would single out the importance of government support and financial institutions support through public-private-partnership for a sound microeconomic policy as drivers of development, a closer look into the government policies, Presidential Decree No. 705, as amended governing the utilization and management of forest resources and Executive Order No. 192 series of 1987 mandating the DENR as the primary government agency responsible for the conservation, management, development and proper use of the country's environment and natural resources, as well as the licensing and regulation of all natural resources as may be provided by law to ensure sustainable supply of wood and equitable sharing of the benefits derived from the forest for the welfare of the present and future generations. Further, pursuant to Republic Act No. 460 (*An Act Regulating the Operations of Sawmills, Requiring Operations of Sawmills to obtain from the Director of Forestry Permits for the operations of such sawmill, and providing penalties for the violation thereof*). Executive Order No. 263, series of 1995 (*Adopting Community-Based Forests Management*), as the national strategy to ensure the sustainable development of the country's forest land resources and provide mechanisms for its implementation.

Executive Order No. 23, series of 2011 (*Declaring a Moratorium on the Cutting and Harvesting of Timber in the Natural and Residual Forest and Creating the Anti-illegal Logging Task Force*), Executive Order No. 26, series of 2011 (*Declaring an Interdepartmental Convergence Initiatives for a National Greening Program*) and Executive Order No. 1993, series of 2015 (*Expanding the Coverage of the National Greening Program*), the following regulations governing the issuance of permits to establish an operation of wood processing plants are promulgated. Those policies mentioned are factors vital to the attainment of economic convergence encompassed within the sphere of public administration and governance.

IMPLICATIONS

The findings of this phenomenological study carry a wide-ranging implication for various stakeholders, particularly policymakers, local government units (LGUs), business owners, industry workers, academic researchers, and institutions involved in economic recovery planning. The lived experiences of lumber industry stakeholders in the Caraga Region revealed not only the vulnerabilities of the forestry sector in the face of a global crisis but also the urgent need to reframe governance, economic support mechanisms, and sustainability planning in the post-pandemic.

The implications that will elucidate the last domain of inquiry for this study. It synthesizes significant insights derived from the experiences of lumber industries in the Caraga Region, as unveiled by their representatives during the focus group discussions and interviews. These insights will then be used to develop a conceptual framework that captures the evolutionary factors and processes shaping the lumber industry's experiences in response to changing conditions in the post-pandemic era. Furthermore, the implication, as apprehended by the researcher, contributes to the corpus of knowledge while situating it within a broader epistemic landscape.

Recalling the findings of the study

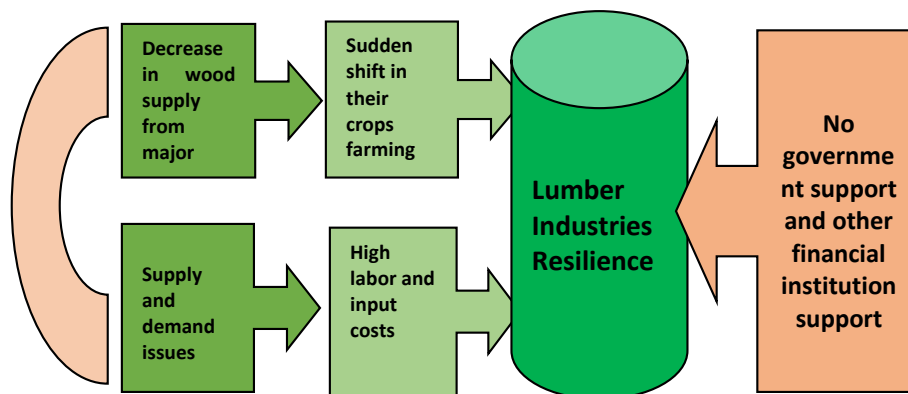
This study sought to gain a deeper understanding of the status of the lumber industries by exploring the experiences of the key informants from lumber industries in the post-pandemic phenomenon, covering the entire journey of recovery from the evident stress brought by the unexpected occurrence of the COVID-19 pandemic.

The significant themes that arose from the lumber industry were that they faced challenges and became resilient and positive to move forward in the new reality, despite no support or assistance from the government. The study revealed three overarching thematic patterns that describe the post-pandemic in the Caraga region.

The essence of the lumber industries post-pandemic experiences, as described by the managers and owners/proprietors in the Caraga region, reflects multifaceted reality characterized by the following major themes: (1) *significance decrease in wood supply from major source resulting to low production*, (2) *supply and demand issues resulting to decrease in profit*, and (3) *gaps in government program and support lumber industries*. These defining features, which constitute the meaning of their lived experiences, form a cohesive narrative of hope and perseverance amidst adversities. The lumber industry's managers and owners/proprietors described that the post-pandemic era is not just a period of challenges and survival but a test of their resilience and positivity to sustain the supply of lumber materials throughout the country. Figure 1 below presents the relationship of elements constituting the lumber industries during the post-pandemic era.

Figure 1.

Conceptual Framework: Lumber Industries during the Post-Pandemic Era



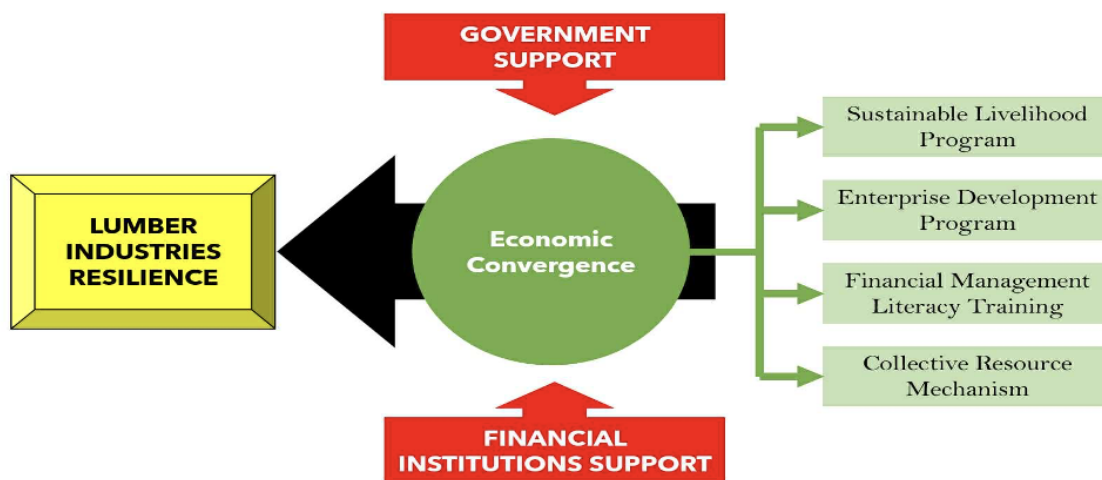
As illustrated in the conceptual framework, the lumber industries highlighted their post-pandemic experiences as collective struggles deriving from external stressors and systemic challenges that directly impact the lumber industry's resilience. It is marked with almost unending sacrifices and survival due to pre-existing problems aggravated by the residual impact of the global health crisis. The interactions of these factors reveal the weaknesses of the lumber industry's system to withstand the crisis and reassess how well the government responds to these issues.

Due to the significant decrease in wood supply from major sources, lumber industries are experiencing low production, which hampers their weekly income that resulting in a sudden shift in crop farming as their means of livelihood to survive. On the other hand, the supply and demand issues that resulted the decrease in profit have challenged the system's capacity to mitigate the issue of high labor costs and input

The lumber industry's resilience and positivity undoubtedly make a difference in wood supply and demand and labor shortages. All these obstacles significantly put a strain on the lumber industry's sustainability to meet customers' needs under very difficult and unstable conditions due to the Covid-19 pandemic, because lumber industries play an important role in construction, furniture and fixtures, and recreation. The global problems and uncertainties in the world economy, the resilience and positiveness of wood supply and demand are becoming important for the sustainable development of the lumber industries. The Caraga region is a key region of lumber production and consumption in the country. However, it faces many internal and external challenges in its wood supply chain. Hence, the participation and support or assistance from the national and local governments and other institutions play a very important role in addressing the resilience and positivity of the lumber industries.

Figure 2.

Lumber Industries Resilience Framework



The lumber industry's framework indicates that the post-pandemic experiences of the lumber business operators and workers are fundamental in shaping the evolution in terms of the lumber industry's resilience that needs to survive and recover from the perceived decrease in wood supply and demand that resulted sudden shift in their livelihood, crop farming, and high labor costs. Lumber industries explore opportunities and adopt a new normal, particularly those who stay resilient.

The lumber industries resilience, they do not have the right resources and capacity to facilitate such transformative developments to survive due to life, properties and economic losses derived from unstable source of wood or low supply of wood, lack of interest among prime suppliers of wood, workers were shifting to agricultural activities due to forced reduction in the number of workers, high labor fees, high fees in the machineries, low buying cost of lumber production, lack of support from the government, no assistance program for lumber industries, no loan or financial gram for lumber business. Henceforth, they need the support of other powerful stakeholders to catalyze these changes.

In response to these triggers and to fill the gaps, the government and financing institutions support were worked together to better develop support to address the economic convergence of an enabling economic environment that fuels the growth and evolution of lumber industries. The government, being the architect of systemic change, has provided support to lumber industries to help revive their livelihood projects.

The government and financing institutions worked together to form interdepartmental economic convergence initiatives to address the lumber industry's resilience. They are the prime solutions to develop the economic convergence for the sustainable livelihood program, enterprise development program, financial literacy training, and collective resource mechanism.

The *Sustainable Livelihood Program*, the Department of Social Welfare and Development (DSWD), has played a central role in creating income-generating opportunities across communities. It focuses on helping households build small-scale livelihoods, particularly those receiving support from the Pantawid conditional cash transfer (CCT) program. These families often rely on farming, fishing, forestry, or informal service work to make ends meet. Alongside DSWD, the Department of Labor and Employment (DOLE) steps in to offer financial assistance to displaced workers, aiming to help them transition into new forms of work or small enterprises.

Since it started in 2011, SLP has tried to expand opportunities in the forestry sector and provide space for micro and small enterprises to grow. In some areas, local governments have followed suit, introducing programs designed to adapt livelihoods and redirect workers toward more stable income sources. Still, for those involved in lumber production, these efforts are often met with hesitation. There's doubt sometimes, even pushback, especially when proposed alternatives don't fully match the economic or cultural realities on the ground.

On a broader level, the idea of economic convergence suggests that over time, less developed economies should gradually catch up with wealthier ones in terms of income and productivity. The European Union is often cited as an example, where countries with lower initial incomes have shown faster growth. This concept matters in policymaking because it offers a way to assess which sectors or regions need attention and how resources might be distributed more equitably. As industries evolve and technology reshapes the marketplace, convergence can also mean that businesses from different sectors begin to overlap, creating new dynamics that weren't there before.

Enterprise development program. The DSWD should ensure that all enterprise development beneficiaries are actively involved in the daily operation of their respective micro-enterprise. Moreover, the DSWD should ensure that all procedures, activities, materials, and equipment for starting up the micro-enterprise have been met.

Financial management literacy training, the Financing Institutions shall conduct a financial literacy training to lumber industry operators, aiming to promote awareness on the financial challenges that they will face in the future and what they can do to prepare for them and attain financial freedom, thus focusing on productivity improvement and promoting growth and progress. Further, to equip employees with the knowledge and skills necessary to achieve financial freedom, thereby reducing financial stress and enhancing productivity, growth, and overall well-being in the workplace.

Collective resources mechanism, it is very important to have the support of the government, specifically the Department of Environment and Natural Resources (DENR), to introduce sustainable natural resources management as essential to lumber industries' livelihoods as an important strategy in the framework for peacebuilding and conflict prevention. The researchers have made advances in assessing the role of DENR as a causal factor for the positive potential of collective natural resource management efforts to reduce broader conflict in less developed. Pursuant to Republic Act No. 460 (*An Act Regulating the Operations of Sawmills, Requiring Operations of Sawmills*), to obtain from the Director of Forestry Permits for the operations of such sawmill, and providing penalties for the violation thereof. Executive Order No. 263, series of 1995 (*Adopting Community-Based Forests Management*), is the national strategy to ensure the sustainable development of the country's forest land resources and provide mechanisms for its implementation. Executive Order No. 26, series of 2011 (*Declaring an Interdepartmental convergence initiatives for a National Greening Program*), the following regulations governing the issuance of permits to establish an operation of wood processing plants are promulgated. Those policies mentioned are factors vital to the attainment of economic convergence encompassed within the sphere of public administration and governance.

Implications on Existing Theory. The study contributes to a deeper understanding of crisis adaptation and resilience among SMEs in resource-based industries. The emergent themes reflect how external shocks, like a pandemic, reshape internal organizational decisions, workforce structures, and industry-government relationships. This validates and expands upon resilience theory and adaptive systems frameworks, which argue that organizational survival is predicated on the capacity to adapt rapidly to environmental changes.

Moreover, this study supports the theory of intersectoral vulnerability, showing that changes in one sector (agriculture) significantly affect another (lumber), thereby highlighting the interconnectedness of rural economies. These insights

can enrich the framework of regional development, supply chain management, and microeconomic behavior during crises.

Implications to Practice/Profession Relative to Public Administration and Governance. The challenges faced by the lumber industry in the post-pandemic era have significant implications for public administration and governance, as these challenges intersect with regulatory frameworks, economic policies, and sustainability initiatives. One major implication is the need for governments to reassess and adapt regulatory frameworks to better support industries like lumber during times of crisis. Further, the Covid-19 pandemic highlighted the fragility of existing supply chains and prompted discussions about regulatory burdens that can limit agility in response to emergencies (Nepal, R., 2020). Effective governance in this context requires policymakers to streamline permitting processes and reduce bureaucratic hurdles, enabling a more responsive approach that can facilitate industry resilience in the face of disruptions.

One of the most significant implications of this study lies in the sphere of public policy and local governance. The findings demonstrate a notable gap in government assistance programs for small and medium enterprises (SMEs), particularly those in the lumber industry. While social amelioration programs (e.g., “ayuda”) were prioritized for households, industry-specific support mechanisms such as access to credit, subsidies for input costs, and technical assistance were lacking or absent altogether.

This calls for a reassessment of NGAs & LGUs and Financing Institutions towards economic recovery frameworks, especially in regions where resource-based industries such as lumber are an integral part of the local economy. Municipal and provincial governments must create sector-specific contingency plans that include: 1) Emergency loan and grant programs tailored to MSMEs; (2) Capacity-building initiatives in crisis preparedness and digital transformation; (3) Public-private partnerships for supply chain modernization; and (4) Inclusion of wood-based industries in broader regional development plans.

Effective governance also means adopting anticipatory governance mechanisms - policies that do not merely react to crises but proactively prepare sectors through risk mapping, stakeholder engagement, and adaptive policy instruments.

On a practical level, this study highlights the fragility of the supply and value chain systems in the lumber industry, especially regarding sourcing raw materials and maintaining workforce capacity. The sharp decline in wood supply caused by farmers shifting to alternative crops reveals how agricultural choices affect industrial sectors. The high input costs, reduced workforce, and market disruptions indicate that businesses need to diversify their strategies and implement flexible, adaptable operations models. For industry practitioners, the following actions are recommended: (1) Invest in local and diversified sourcing of raw wood to lessen dependence on single sources; (2) Improve inventory management systems to prepare for future supply chain disruptions; (3) Develop community-based partnerships with farmers to promote agroforestry or mixed-use land practices; and (4) Create sustainable labor force strategies, including skills training, retention programs, and enhanced wages to attract workers back to the sector.

Lumber businesses may also need to explore value-adding innovations (e.g., engineered wood products, eco-certified lumber) to remain competitive and profitable despite ongoing market volatility.

The post-pandemic pressures have forced a re-evaluation of sustainability in forest resource use. This study implies that future growth in the lumber sector cannot be delinked from environmental stewardship. The experiences shared by informants point to the need for sustainable forestry management, especially in the Caraga Region, an area rich in forest resources but also increasingly vulnerable to deforestation and environmental degradation.

The findings highlight the importance of supporting community-based forest management programs (CBFMPs), promoting agroforestry systems that integrate wood production with sustainable farming, and developing educational campaigns that encourage farmers to balance agricultural expansion with forest preservation. Sustainability must be incorporated not only at the production level but also in policy dialogues and recovery plans, ensuring that environmental priorities are embedded in post-pandemic industrial development.

Implications for Future Researchers. The findings also open several avenues for future academic inquiry, including comparative studies that can be conducted between the lumber industry and other MSMEs in Caraga or other regions

to analyze differential recovery strategies. Longitudinal studies may examine whether lumber businesses that survived the pandemic are adopting more sustainable and resilient practices long-term. Further research should explore the role of informal networks, cooperatives, and local associations in sustaining business operations during prolonged crises. Additionally, the gendered impacts of the pandemic on labor participation in the lumber industry remain an understudied area and could be explored in future qualitative or mixed-methods research.

In a nutshell, the lived experiences of the lumber industries in the Caraga Region during the post-pandemic era highlight a complex interplay of economic, social, and governance factors. The findings strongly suggest the need for multi-level, integrated, and future-facing policy frameworks that can support vulnerable industries during crises and guide their transition to more sustainable and resilient models of operation. Addressing the gaps in public support, investing in human capital, and fostering adaptive strategies are all essential to ensuring that the lumber industry and other similar sectors can withstand future disruptions and continue to contribute meaningfully to regional and national development.

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