



ORIGINAL RESEARCH

## Women's participation, challenges and problems encountered in major fish markets during the COVID-19 pandemic in Davao, Philippines

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**ABSTRACT.** Women fish vendors actively participate in the fishery sector but they face various challenges regarding their financial capital and opportunities. There is a power imbalance within the market as men seem to dominate and women hold no power or voice to protect their rights. This study provides valuable insights regarding the perceptions and experiences of these women in the Davao region, by not only focusing on the role of women in fisheries and major fish markets in Mindanao, Philippines, but also on their contribution and the challenges they meet. We have conducted semi-structured field interviews with women fish vendors (n = 99) and in-depth follow-up interviews to validate the results (n = 80). Among respondents, 90% in Tagum, 80% in Panabo, and 75% in Davao City were vendors who did not own their stalls. Despite women's active involvement in fish trading activities such as fish vending, fish brokering, and financing in the market, many of them do not have stalls on their own. It was found that women participate in the fish marketing sector because they received previous training from family members involved in the business (29%), or they wanted a well-paying job (19%), or it was their only economic opportunity (14%). Another reason was profitability (9%) to support their families (9%) and children (8%). Common problems encountered by women in the fish market included a decline in customers (40%), work exhaustion due to the combination of their market and domestic duties (14%), and rude customers and employers (10%). In addition, women also reported challenges regarding mobile vendors (9%), low fish prices (8%), and not having access to financial credit (8%). Many of the women support their husbands by providing additional income for their families. Overall, women fish vendors play a critical role in the local economy of their villages and families. This implies that greater support is needed for women to have financial access to fishing businesses and become beneficiaries of training and livelihood development programs while helping their families overcome food insecurity and poverty.



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**Key words:** Davao region, fish vendors, gender issues, livelihood, processors.

**Participación de las mujeres, desafíos y problemas encontrados en los principales mercados pesqueros durante la pandemia de COVID-19 en Davao, Filipinas**

**RESUMEN.** Las mujeres vendedoras de pescado participan activamente en el sector pesquero, pero enfrentan varios desafíos en cuanto a su capital financiero y sus oportunidades. Existe un desequilibrio de poder dentro del mercado, ya que los hombres parecen dominar y las mujeres no tienen poder ni voz para proteger sus derechos. Este estudio proporciona información valiosa sobre las percepciones y experiencias de estas mujeres en la región de Davao, al centrarse no solo en el papel de las mujeres en las pesquerías y los principales mercados pesqueros de Mindanao, Filipinas, sino también en su

contribución y los desafíos que enfrentan. Hemos realizado entrevistas de campo semiestructuradas con vendedoras de pescado ( $n = 99$ ) y entrevistas de seguimiento en profundidad para validar los resultados ( $n = 80$ ). Entre los encuestados, 90% en Tagum, 80% en Panabo y 75% en la ciudad de Davao eran vendedores que no eran propietarias de sus puestos. A pesar de la participación activa de las mujeres en actividades comerciales de pescado, como la venta y el corretaje de pescado y la financiación en el mercado, muchas de ellas no tienen puestos de venta propios. Se encontró que las mujeres participan en el sector de comercialización de pescado porque recibieron capacitación previa de familiares involucrados en el negocio (29%), o querían un trabajo bien remunerado (19%), o era su única oportunidad económica (14%). Otro motivo fue la rentabilidad (9%), para mantener a sus familias (9%) y a sus hijos (8%). Los problemas comunes que encontraron las mujeres en el mercado de pescado incluyeron una disminución del número de clientes (40%), el agotamiento laboral debido a la combinación de sus tareas domésticas y de mercado (14%) y clientes y empleadores groseros (10%). Además, las mujeres también informaron problemas relacionados con los vendedores ambulantes (9%), los bajos precios del pescado (8%) y la falta de acceso a crédito financiero (8%). Muchas de las mujeres mantenían a sus maridos proporcionándoles ingresos adicionales a sus familias. En general, las vendedoras de pescado desempeñan un papel fundamental en la economía local de sus aldeas y familias. Esto implica que se necesita un mayor apoyo para tener acceso financiero a empresas pesqueras y que se conviertan en beneficiarias de programas de capacitación y desarrollo de medios de vida, al tiempo que ayudan a sus familias a superar la inseguridad alimentaria y la pobreza.

**Palabras clave:** Región de Davao, vendedores de pescado, cuestiones de género, medios de vida, procesadores.

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## INTRODUCTION

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Women fish vendors participate in the fisheries sector through capture, aquaculture, processing, and marketing in the fish distribution network or fish trade (Aswathy and Kalpana 2018; Mutia et al. 2020). In various fishing communities, men do most of the fishing activities, while women process the catch and then sell it in public markets (Weeratunge et al. 2010). In addition, women also perform household chores such as taking care of their children and elderlies, buying groceries, cooking, cleaning, sending children to schools, budgeting of their household finances, and other household needs (Hapke 2001; Bennett 2005; Fitriana and Stacey 2012; Rohe et al. 2018). Their daily household needs are the reasons why women try to find other sources of income besides fishing (Bradford and Katikiro 2019). Given such a situation, women's occupations, especially in the fish market, are due to household necessities and community social status (McGinn and Oh 2017; Manstead 2018). As a result, many of them also become adept at selling fish to their neighborhood or public market (Hapke and Ayyankeril 2004; Aswathy and Kalpana 2018). Thus, women vendors perform both domestic du-

ties and laborious tasks in the market (Bird 2006; Frocklin et al. 2013; Munn 2013). They contribute to improve protein intake for their households and the well-being of their communities through the fish products they sell (Siason, 2001; Paris 2004; Parks et al. 2014). Moreover, in various fishing communities, women may start up any business using credits or loans to trade fish and do fish processing. In the long run, such benefits may help elevate their socioeconomic conditions in the community (Frocklin et al. 2013).

Fortunately, at present, there is a positive momentum in women's business ventures in the fisheries value chain (Barclay et al. 2022). For instance, Toulmin (2009) found that most women compose the majority (60% to 80%) of employees in the commerce industry in West African cities. In an early work by Levin et al. (1999), women represented 90% of all workers doing petty trading as their primary employment, which entails the sale and purchase of products and nearly 100% of all street food sellers. The denotative concept of women's role in fisheries refers to the specific functions, duties, and impacts that women fulfill within the fishing sector. This includes fishing itself, processing, marketing, and management of fisheries resources (Koralagama et al. 2017). In many coastal areas, women lead the way in marketing,

ensuring that local buyers have access to fish. In times of disasters, women also keep selling fish and vegetables, ensuring the food security of their communities (Maynawang et al. 2023). Their role in fish markets is not just a matter of economic necessity, but it also shows their self-determination and knowledge in this field (Cole et al. 2018, 2020). Understanding and promoting sustainable fisheries management and gender equality relies heavily on comprehending women's roles and involvement in fisheries (Koralagama et al. 2017). Indeed, women's participation in fisheries is essential, but they face various challenges regarding their financial capital and opportunities (Mutia et al. 2020). For instance, there are differences between men and women in terms of access to resources (Chandra et al. 2017; Torell et al. 2021). Women earn less or are paid lower salaries compared to men and are more likely to work as low wage earners (FAO 2008; McGinn and Oh 2017). Some studies have even demonstrated that when fisheries commodities such as shellfish, sea cucumbers, seaweeds, octopods, and jellyfish become worldwide commodities with high-value, women who first gathered or sold them were quickly displaced by men (Lwenya and Abila 2001; Frocklin et al. 2013). There is a power imbalance within the market as men seem to dominate and women hold no power or voice to protect their rights (Menon 2020).

Additionally, Blanc (1998) found that many women depended on wholesale marketplaces or landing centers for their fish products. They typically move from one auction or center to another in search of cheaper fish. While the profile of women's role in fisheries is increasing, domestic work is still regarded as their primary duty. Women's contributions to the fisheries value chain are reportedly focused on post-harvest processing and the marketing of fisheries products (Mutia et al. 2020; Maynawang et al. 2021; Torell et al. 2021). In the Solomon Islands, marketing includes informal roadside stalls, in-village selling of fish, small and dynamic village markets, markets in provincial centers or the capital city of Honiara,

and buyers who might be operating out of shops or appear in villages to buy products. Once the domain of women is established, fish marketing is taken over by male vendors, malls, and upscale shops that promise home delivery services. Women's market chain functions, contributions, and dependencies often remain invisible due to inherent bias in documentation and reporting (Kleiber et al. 2015). Because men primarily coordinate and interact with fisheries agents, most of women's needs and contributions in the fisheries were not recognized. Understanding the importance of Davao as a location for examining women's roles in fisheries is essential to appreciate the significance of this study. Positioned strategically within the Philippine 'tuna highway', Davao is renowned for its abundant marine biodiversity and extensive tuna fisheries, serving as a central hub for commercial fishing activities such as tuna fishing, processing and trading (Macusi et al. 2022a; Ocampo and Binondo 2022). The gendered division of labor suggests that societal norms dictate gender-specific roles in fisheries, shaping women's involvement (Murunga 2021). In the location of the study, women are expected to handle tasks including selling, cleaning, and processing, while men often take on roles like heavy lifting and negotiation, influenced by perceived gender norms and physical disparities (Weeratunge et al. 2010). Community resilience theory examines how communities respond to challenges through collective action (Glass et al. 2022), with the hypothesis indicating that fishing communities in the area may show resilience to use social networks, diversify income sources, and adapt market strategies to address issues like fluctuating fish prices or supply chain disruptions, including those caused by the COVID-19 pandemic (Bassette et al. 2021; Macusi et al. 2023). Theories of crisis management and disaster studies provide insight into how societies handle sudden events like pandemics, with the hypothesis suggesting that the COVID-19 pandemic likely had significant impacts on the area's fish markets, affecting women

vendor's livelihoods, market dynamics, and access to resources, resulting in reduced market demand, supply chain disruptions, health risks, changes in consumer behavior, and economic insecurity (Al Eid and Arnout 2020; Macusi et al. 2022a, 2022b; Thanh and Duong 2022).

Literature on women's role in the fish market is still limited, including understanding their reasons for involvement, especially in southern Philippines (Weeratunge et al. 2010; Kleiber et al. 2015; Williams 2016), while several studies focused on gender in Visayas (Ferrer et al. 2014) and in Luzon (Mutia et al. 2020). There are far fewer investigations concerning the role of women in the fisheries in the Mindanao region (Macusi et al. 2022a). Dealing with gender stereotypes in physically demanding fisheries jobs involves challenging traditional norms, advocating for fairness, and fostering inclusive work environments. In fact, offering women in these roles requires adequate training, resources and assistance to break down stereotypes and enable their full participation (Lawless et al. 2021). Increasing awareness and recognizing women's contributions can change how society views these jobs, leading to more diversity and inclusivity in the industry (Egna et al. 2012).

This study covered the major fish markets in the Davao region, specifically in Toril and Bankerohan public markets in Davao, Panabo, and Tagum cities. Recognizing women's roles in fisheries during COVID-19 is important, yet research on women in major fish markets during crises is still missing. Closing this gap empowers women economically and sows women's strong intervention (Garcia et al. 2022). Studying Mindanao's fishery sector is essential due to their heavy reliance on fisheries. This study revealed women's experiences, reports inclusive policies locally and regionally, and promotes global sustainability. This paper intended to fill this gap as it raises awareness on the role and participation of women in the major fish markets of Davao and discusses their reasons for involvement in various market activities during the COVID-19 pandemic.

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## MATERIALS AND METHODS

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### Description of the study area

The first study site was Tagum City, Davao del Norte, which was considered a highly urbanized city with 259,444 residents, and predominantly an agriculture-producing area that exports bananas (Loquias et al. 2022; Macusi et al. 2023a, 2023b) (Figure 1). Tourism is also one of its major economic drivers in the city with most tourists coming from local and nearby provinces. Fish supply in the market mainly comes from Governor Generoso, General Santos city, and the two provinces of Surigao (Macusi et al. 2022c). The second study site was Panabo city, with a population of 184,599 and predominantly relying on agricultural products such as exporting bananas, and milkfish mariculture. Most of the fish supply comes from local fishers, and intensified by supplies from Governor Generoso, General Santos city, and the Surigao provinces. The third study site was located in Davao city, a highly urbanized first-class city with a population of 1,632,991 and cultivations of bananas, cacaos, coconuts, coffee, mangoes, mangoosteens, and pineapples (PSA 2022). It is the leading exporter of fruits such as mangoes, grapefruits, bananas, coconut products, pineapples, papayas, mangoosteens, and cacao in Mindanao. Most fisheries products come from local production particularly, Governor Generoso, Samal, General Santos city, Zamboanga city, and the Surigao provinces. Main traded fisheries products traded are yellowfin tuna, bigeye scad, roundscad, mackerel scad, sardines, and even cultured species like milkfish, mud crabs, shrimps, and tilapia (Macusi et al. 2022b).

### Data collection

Field sampling was conducted from September to November 2019 in selected public markets around the Davao Region (Tagum, Panabo,

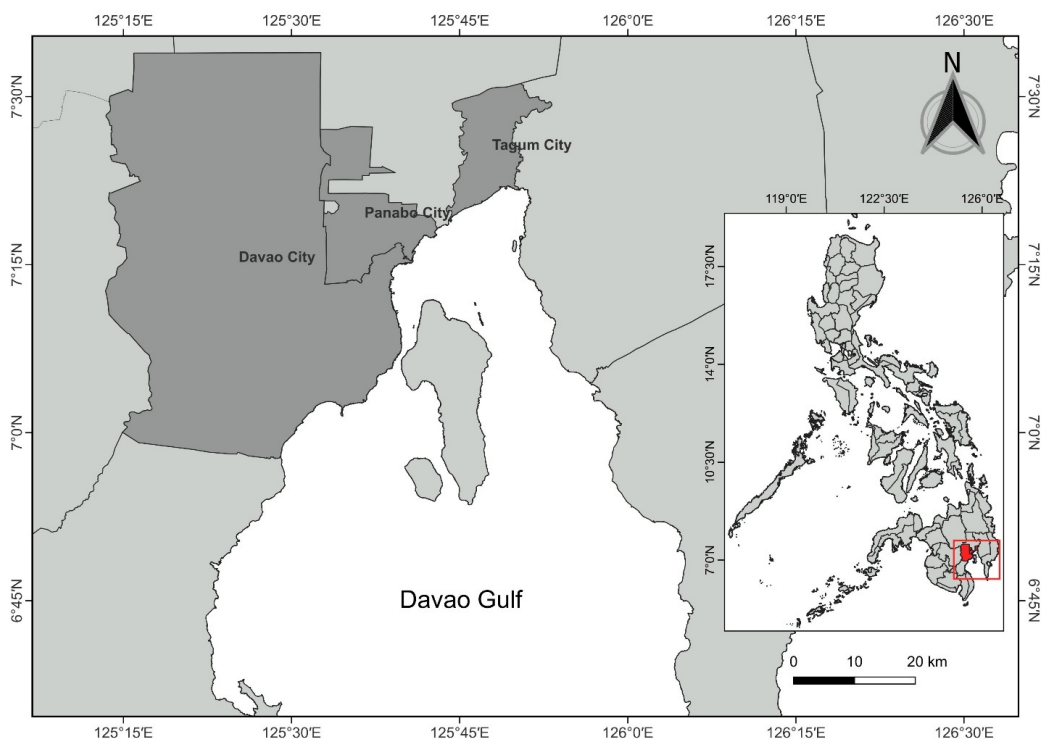


Figure 1. Map of the Philippines showing the location of main commercial markets in the Davao region.

and Davao cities). Then, to confirm results of the semi-structured interview ( $n = 99$ ), in-depth interviews ( $n = 80$ ) for data validation were also conducted. Moreover, the decision to link the study to the COVID-19 pandemic may have been motivated by an awareness of its broader implications for the fisheries sector. These implications include potential disruptions to market dynamics and livelihoods, which could persist beyond the initial stages of the pandemic from March to May 2020. Furthermore, the mid-2020 in-depth interviews were aimed to capture the on-going impacts and responses of vendors regarding the pandemic, rather than simply focusing on its initial phases. The government recognized COVID-19 impacts in the Philippines already when it was in March, 2020 and proclaimed a three months of lockdown (Macusi et al. 2022).

A formal Ethical Board was not established during the initiation of this project in 2019 nor it existed already in 2020 in the college. Random

interviews were performed after providing permission letters to the *barangay* chairman of the fish market location, which included a visit to the economic enterprise divisions of their local public markets. In the Philippines, villages are called *barangays* and it is the smallest unit of government. The questionnaire on fish vendors collected data on their socio-demographic profile (age, education, civil status, and years in the business), sources of income, stall ownership, daily activities in the market, participation in the market, family involvement, reasons of involvement, catch species sold, awareness and support for the closed fishing season implemented in the Davao Gulf. In July 2020, in-depth interviews with shop owners, middlemen, and market regulators were carried out. Respondents were selected based on their relevance to the study's objectives and their experiences in the fisheries sector. The sample size of  $n = 99$  was determined based on practical considerations and



feasibility within the study's constraints. The term 'in-depth interview' refers to individual interviews with participants. Respondents were selected based on their relevance to the study's objectives and their experiences in the fisheries sector. In the discussion section, the results from these interviews were incorporated to offer qualitative insights and to contextualize the quantitative findings. Although the in-depth interview sample size approaches the overall sampling size, each interviewee contributed unique perspectives, enriching the discussion and facilitating a comprehensive analysis of the research findings. Main questions asked included the following: are there more women, men, or equal numbers of them working in the fish market?; what are the differences in activities performed by men and women in the fish market?; what are their reasons to get involved in this kind of work?; are women happy and satisfied with their jobs in the fish market?; do they have other aspirations related to work?; if allowed to shift to another job, do women typically remain or leave fish trading?; what are the women's economic participation, opportunities, and constraints in fish trading?; what are the resources available to women involved in fishing/trading fish?; do they have access to credit or government loan programs?; and what are the significant problems, issues, and needs faced by them in fish trading? All interview questions were written in English and then translated into the local language, Cebuano. As mentioned above, the follow-up interviews were a way to validate the existing information that was taken from the semi-structured interviews, while we also did not restrict ourselves from the same questions asked because during this time, the pandemic had already struck and fieldwork had been very restricting in different study sites due to requirements asked by different local governments. Some of our previous questions then could not be valid anymore because we were dealing with pandemic-stricken vendors, which explains the inclusion of the impact of the pandemic among the questions. It was still covered by the objectives of this study since we were

dealing with the perceptions and experiences of the fish vendors.

### Data analysis

The interview data was analytically coded for emergent themes and sub-themes. Coding for themes is a commonly used method in qualitative data analyses (Kumar 2011; Yin 2016). Themes were then analyzed using descriptive statistics such as frequency counts and percentages, and further interpreted. All numbers with decimal places were rounded to the nearest whole number whenever possible because these were based on individual respondents. Most of the analysis did not contain cost components but centered on interactions between public market participants (Drury O'Neill et al. 2019). Moreover, direct quotes were used from the qualitative analysis of the in-depth interviews conducted in the fish markets.

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## RESULTS

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### Socio-demographic profile

The average age of women in the three studied markets in Davao region was 56 years old. The mean age of female respondents was 44 years old in Tagum city, 43 in Panabo city, and 40 in Davao city. The youngest respondent was 25 years old, and the oldest was 70 years old. Majority of respondents were adult, age ranged 41-50 (29%) and 31-40 (27%) (Figure 2 A). Most respondents finished basic elementary education, with some finishing their secondary level education (37% from Davao city and 35% in both Tagum and Panabo city markets) (Figure 2 B). Market stall was mostly rented inside the market, with Tagum city market having the highest rental fee (90%) followed by Panabo city (80%), and Davao city markets (75%; Figure 2 C). In terms of their market job, women respondents were vendors in Tagum (90%), Panabo

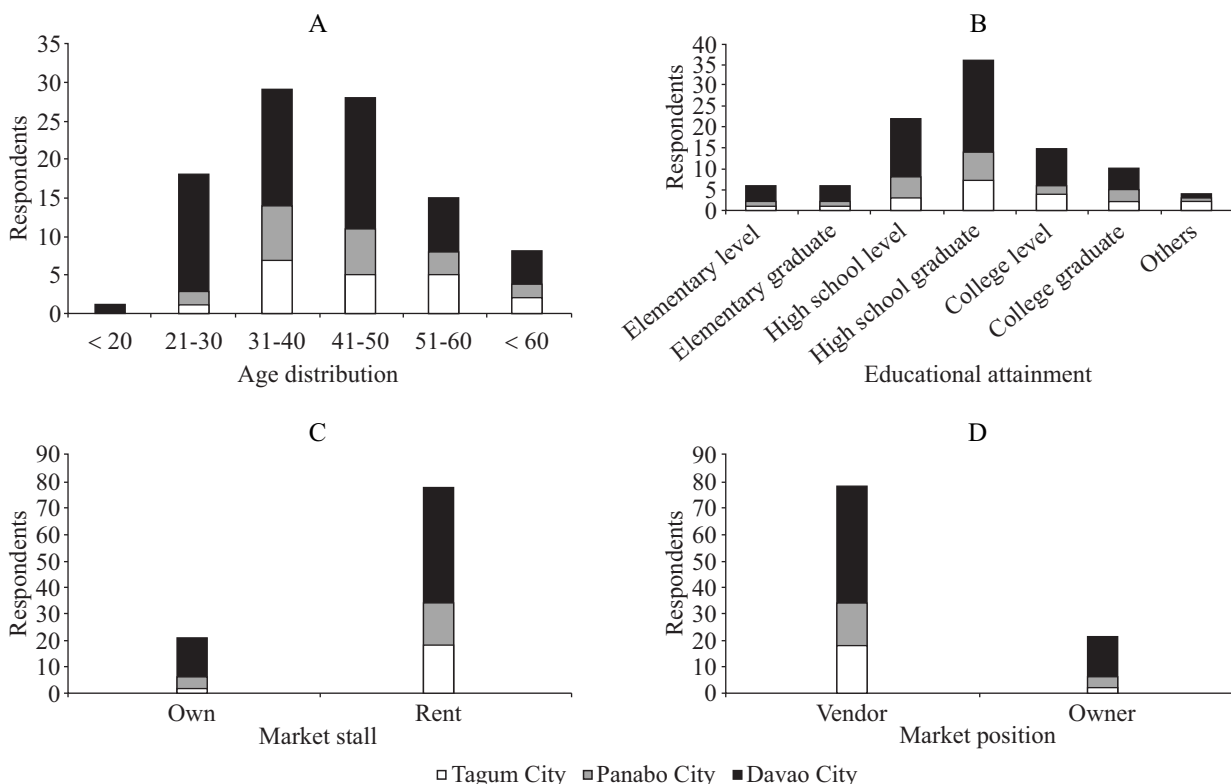


Figure 2. Age distribution (A), educational level achieved (B), market stall (C), market position (D) of women respondents by study sites.

(80%), and Davao (75%) cities rather than business operators or owners (Figure 2 D).

**Market activities and reasons for involvement in the fish market**

Market activities included the regularly selling of various fish products in Tagum (27%), also in Panabo and Davao (both 20%) cities. The next most frequent activity was weighing of fish products in Panabo (20%), Davao (19%) and Tagum (17%). This activity was usually followed by cleaning the fish bought by customers in Panabo and Davao (15%) and Tagum (14%) cities. The sorting of fish in Panabo city consisted of 15% of their daily activities, while in Tagum and Davao cities it consisted of 14%. Fish packing also comprised 15% of their activities in Davao, 13% in Tagum,

and 11% in Panabo city. In addition, about 14% of the respondents in Davao city self-reported slicing fish while only 13% in Panabo city, and 10% in Tagum city did fish slicing. However, far fewer women respondents were involved in negotiating the price of fish from the fish landing sites: 5% in Panabo, 3% in Tagum and Davao cities. The daily activity in the market with the lowest participation of women was fish unloading, with only 2% in Panabo and 1% in both Tagum and Davao cities (Figure 3 A).

Results also showed that most women started working in the decade of 2011-2020, representing 36% in Davao city. Other women started in the decade of 2001-2010, with the highest rate in Panabo (32%). The third most frequent start decade was in 1981-1990 with again 26% being highest in Panabo. Far fewer vendors started in the decade 1991-2000

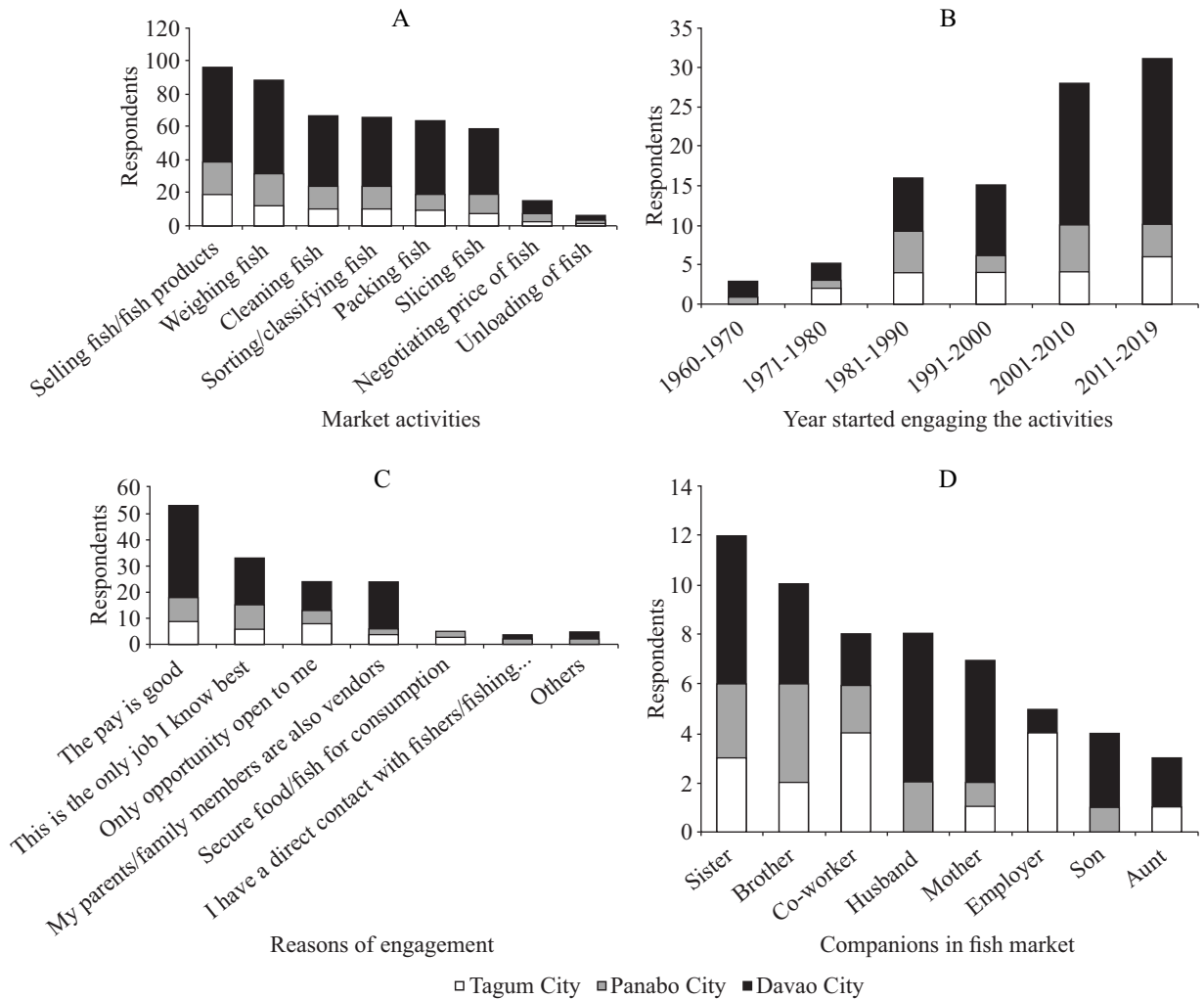


Figure 3. Market activities (A), year started (B), reasons to get involved in market activities (C), and usual companions in fish market (D) of women respondents by study sites.

with 20% as highest from Tagum. There were only 10% (Tagum) of respondents that started working from 1970 to 1980 in Tagum. Finally, only 5% of vendors (highest rate in Tagum) started in 1960 to 1970 (Figure 3 B).

Most respondents reported they got involved in the fish market firstly because it was considered as a well-paying job, with the highest number in Davao city (40%). Secondly, women mentioned that their involvement in the market happened because it was the only job they knew best, with the

highest rate in Panabo (29%). Then, about 27% of the respondents from Tagum city, reasoned that this was ‘the only opportunity for them’. Followed by 21% from Davao city who reasoned that, ‘their parents or family members involved also as vendors’ in the fish market. Food security was another reason as reported by 10% of respondents from Tagum city while about 6% in Panabo city had ‘prior or direct contacts with fishers’ or fishing operators which initiated their involvement in the fish market (Figure 3 C).



Overall, women respondents in all study sites have close relationships with their companions and usually a family member or relative as they sell their fish. In Davao and Tagum cities, 21% and 20% started becoming vendors through helping their sisters, and about 14% and 13% started becoming vendors by assisting their brothers. Interestingly, 31% of the respondents in Panabo city self-reported that their brothers were their companions. About 27% of the respondents in Tagum city, reported their coworkers as their companions. While in Davao city, 21% of the respondents mentioned that their husbands were their companions. Some respondents stated that their mother was also their companion in Davao city (17%), and sometimes their employer was also their companion in Tagum City (27%) but only occasionally, respondents reported that their sons accompanied them in Davao City (10%) (Figure 3 D).

### Results from the in-depth interviews

The women respondents' average age was 39 years which was younger compared to the first interview, and the youngest to oldest respondent ranged from 14 to 79. Nearly all the respondents noted an equal number of men and women in the fish market in the Davao region based on their observations. One retailer summarized the reason behind this as follows:

'If there were several women vendors here inside the market, then there are also more men found in the fish landing (bagsakan) area. The slicers, most of them were men, but inside the market some women did the fish slicing. Since the work at the fish landing was for wholesale, it consists mostly of heavy work' (retailer, Panabo city Public Market, interview 2).

All respondents identified differences in activities performed by men and women in the fish market. Lifting tubs, and heavy buckets, bringing ice or heavy loads of fish, butchering, and performing

manual jobs were mostly done by men, whereas women were in charge of selling fish, and working as cashiers, checkers, and recorders of traded fish. As for the explanation, most respondents said:

'Lifting heavy fish like tuna and tubs that weigh more than 40 kg are backbreaking which women cannot easily perform. Women tend to lift lightweight objects like a few kilos of fish or sliced tuna because women have lesser physical strength compared to men. Men can also perform the activities done by women such as marketing, but this is usually given to women because they tend to be more careful and better negotiators to buyers' (sidewalk retailer, Toril Public Market, interview 54).

Women vendors also discussed the reasons why they got involved in working at the fish market. More than a half mentioned that they worked for their families. Nearly half said this was the only job they knew and that this was the job that best fitted them. Some owners similarly said that their parents passed them the business. One of the women vendors from Tagum public market quipped:

'I did this for extra income to assist my husband since my salary is paid in the afternoon (after my duty of selling fish) while my husband will get paid every fifteen days. I also get free meals when I sell fish during the day' (vendor, Tagum Public Market, interview 27).

Additionally, almost all of them were happy and satisfied with their work in the local fish market. Changing to another job was not being considered, they still chose to remain in fish trading:

'I am quite happy here, and the main reason was my boss. My boss provides us with a free one kilo of fish every day and by the end of the month, he usually slaughters a pig or chicken for us. We are usually given at least 10 kg of meat for free as our share from the slaughtered pig

or chicken. This is enough to eat and live' (dispatcher, Panabo Public Market, interview 13).

Another added:

'I enjoy working here. A long time ago, I was offered to sell fish at NCCC or other companies. I declined the offer since I like to stay in this place and I have my own business in our local market' (owner, Bangkerohan Public Market, interview 77).

Moreover, women share the idea that their opportunities in fish trading are in selling fish since most of the vendors were women. At the same time, their constraints and limitations were related to obtain access to market loans which were only available to business owners but not to the renters or vendors. In this case, most of them go to informal lending institutions, including 'arawan' or daily payments to ask for microcredits to companies or cooperatives or rich individuals:

'For me, only selling fish at the market stalls and doing a secretarial job in the fish landing areas were our opportunities as women here because the jobs of hauling, carrying fish, cutting, and distributing ice were for men. There were some resources available to women involved in fish trading, but I am not qualified since only the business owner can be catered' (checker/secretary, Panabo Public Market, interview 3).

In contrast, the major problems faced by women in the market at that time were minimal sales due to the pandemic. One stall owner cited her case:

'I think the major problem in the fish market today is the daily expenses. We have a tiny income, and it's very different compared to those months before the pandemic. Last time, our debt was minimal, compared now, this has grown. If I cannot fully pay the stock at the fish landing, the wholesaler cannot give me newer and fresh-

er fish. It is also tougher today to find a bank credit source to finance your business due to the pandemic' (stall owner, Panabo Public Market, interview 6).

Overall, based on the coded themes from the in-depth interview, reasons for getting involved were the following: family business (29%), well-paying job (19%), and good economic opportunity (14%). In other cases, many of the respondents also reported that their involvement had been profitable in fish vending (9%), and it made it possible to support their families (9%) and their children (8%). Some of them stated that they got an opportunity to have free meals also (6%), and the workload was light and easy (4%) apart from enjoying their job (3%) and being close to their family (1%) (Table 1).

In general, the challenges faced by the respondents were fewer customers due to restrictions in the market brought about by the pandemic (40%). Many women respondents complained of exhaustion from work once they arrived home, as they still needed to do the household chores such as cooking, cleaning, and doing the laundry (14%). Vendors also experienced rude customers and stall owners (10%). An increase in the number of street vendors was also a problem (9%). Moreover, lack of credit access from formal lending institutions (8%), lower fish prices (8%) and lower salary wages given to women (5%), and lower fish supply (4%) were accounted as difficulties they had to deal with (Table 2).

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## DISCUSSION

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### **Roles of women vendors in Davao region's major fish markets**

Results of this study revealed that women in the fish markets have minimum education levels and limited access to cooperatives or credits, consistent with those reported by Tindall and Holvoet (2008).

Table 1. Top reasons emerging from the in-depth interviews to get involved in the fish market (n = 80).

| Reasons                              | Frequency | Percentage (%) |
|--------------------------------------|-----------|----------------|
| To support their children            | 6         | 8              |
| The only job available for them      | 11        | 14             |
| Family business                      | 23        | 29             |
| The pay is good                      | 15        | 19             |
| Income supports their family         | 7         | 9              |
| The work was easy                    | 3         | 4              |
| Free meals/viand                     | 5         | 6              |
| The business is profitable           | 7         | 9              |
| She has time to spend for the family | 1         | 1              |
| She enjoys her job                   | 2         | 3              |

Table 2. Challenges and problems of vendors identified after the in-depth interviews in all study sites (n = 80).

| Challenges                        | Frequency | Percentage (%) |
|-----------------------------------|-----------|----------------|
| No credit access                  | 6         | 8              |
| Minimal sales due to the pandemic | 32        | 40             |
| Low fish price                    | 6         | 8              |
| Rude customers/boss               | 7         | 10             |
| Lower wages                       | 4         | 5              |
| Lower fish supply                 | 3         | 4              |
| Exhaustion from work              | 11        | 14             |
| No other jobs available           | 4         | 5              |
| Mobile or street vendors          | 7         | 9              |

Besides, most of women vendors struggle to have access to funds and choose to establish their revolving funds. Over the past years, the number of women entering the fish markets has increased (Frocklin et al. 2013). Women respondents specified that the increase in the number of workers was due to the favorable payment per day (7-10 USD) as stated by the respondents during the in-depth interview. This finding was similar to those of Bradford and Katikiro (Bradford and Katikiro 2019), where only the owner of a stall can have access to market cred-

its. Moreover, compared to other studies, women vendors interviewed expected their partners to fulfill particular roles in their homes (Blanc 1998). Men were expected to pay for the rent, food, furnishings, and school fees of their children. Levin et al. (1999) mentioned some men were unable to keep their promises as they tended to spend more time for entertainment, whereas others had never followed up on their commitments at all. Although a challenge, this was also a motivation for women to be inclined to work hard for them to be able to

survive. Previous studies show similar accounts with women playing various roles and obligations in the market and in their homes which they take seriously (Samuel 2007). Most women unequivocally support fisheries conservation by limiting the fishing season as this will also sustain their jobs (Brillo et al. 2019; Macusi et al. 2021).

### Reasons for involvement in the fish markets

Some women vendors stated that their parents had trained them at a young age to become their assistants until they could take over the business when their parents were no longer capable (Hapke and Ayyankeril 2004). Blanc (1998) also emphasized the value of supporting families even among vendors. As the fish market is changing, women have also turned from fish vending to becoming entrepreneurs and empowering one another in the market, similar to the result of traders from the south Indian fishery and Zanzibar, Tanzania (Hapke 2001; Frocklin et al. 2013). However, these findings contrast those of Aswathy and Kalpana (2018), in which women vendors directly purchased their fish supply from fishers in landing sites or ports.

Moreover, women have entered in the marketing process, from fish unloading to the sale of fish in the public markets (Siason 2001; Mutia et al. 2020; Torell et al. 2021). Based on this study, it can be noted that women's primary strategy to sell their fish was through affordable prices and getting regular customers or 'suki' a kind of patron-client relationship. The practice of having regular customers through 'suki' relationships in the Philippines is used mainly to bond individuals to guarantee that products are well supplied and disposed of on a regular basis (Maaike Hendriks 1994). This relationship with customers is essential because fish is a perishable good. Moreover, similar results from Frocklin et al. (2013) indicated that Zanzibar men and women traders spend almost eight hours per day on the fish trade, women fish vendors from Davao also do the same, but their work does not end there. They also need to spend time on domes-

tic and childcare responsibilities, especially since most respondents were married. Thus, women have substantially longer workdays, and somehow other women traders will extend their working hours to manage their business inside the fish market. Contrary to Frocklin et al. (2013), where women were not allowed to rent stalls inside the fish market, our findings revealed that women can rent stalls and have access to market cooperatives available for market business. Women fish vendors comprise the highest percentage of workers in the local markets and this is where they derive their primary source of income (Kizito et al. 2009). In Ghana, women fish vendors played an important role for the local economies to thrive as they also do in the Philippines when women were given key roles in various market activities and trading (Levin et al. 1999; Pavo and Digal 2017). In General Santos city, Pavo and Digal (2017) found that women could manage their spaces and maintain relationships in the port as *jamboleros* (fishbrokers), traders, and vendors. Vendors experiences in the fish port complex are their primary way to go up in the economic ladder of opportunities which is supported by the findings of this study regarding women in local fish markets.

### Challenges and problems mentioned by fish vendors

The major problem mentioned by respondents was the difficulty in selling their fish stocks. Despite that, these fish vendors did not complain about helping to provide for their families. The reasons for declining costumers were mainly due to the pandemic, the mobile restrictions and fear of their customers to go in crowded places and catch COVID-19. Work exhaustion was also reported as many of these women do multiple roles in the market and at home when they return from their jobs. They still need to carry-out household duties like cooking, cleaning, and laundry for their spouses and children which can consume their enthusiasm and energy. In addition, they also faced rude customers and managers, their reaction being

hidden through wearing big smiles to show respect and modesty. Many of them also declared that they were not formerly interested in fish vending but since their husbands were unemployed, they had to support their families. In their view about side-walk vendors, they did not blame many of them because they also understood their need to work, eat and survive the following day.

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## CONCLUSIONS

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Findings directly address research objectives on women's roles and participation in fish markets in the region, emphasizing the interconnection between women's roles in household economics and their involvement in market activities. This emphasizes the importance of understanding gender dynamics within fisheries for advancing sustainable development. To build on the findings of this study, future research could explore long-term studies to monitor shifts in women's involvement in fish markets over time. This would lead to gain insights into changing gender roles and opportunities in the fisheries sector, conducting further qualitative research to delve deeper into the socio-cultural factors influencing women's involvement in fish markets, including norms, values, and perceptions of gender roles, and assessing how gender-sensitive policies and interventions impact women involvement in fisheries in order to guide policy-making and enhance gender equality in fisheries management.

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## Author contributions

Erna S. Macusi: conceptualization, methodology, data collection, writing-original draft preparation, writing-reviewing and editing. Ivy M. Nallos: conceptualization, methodology, data collection, writing- original draft preparation, visualization, analyses, writing-reviewing and editing. Charlen Mae G. Canales: conceptualization, methodology, data collection, writing-original draft preparation, visualization, analyses, writing-reviewing and editing. Michael Jeriel I. Bersaldo: data collection, writing-original draft preparation, visualization, analyses, writing-reviewing and editing. Edison D. Macusi: conceptualization, methodology, visualization, analyses, writing-reviewing and editing, supervision, fund acquisition.

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