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Socioeconomic Determinants of Older Rural Women Involved in CSO of Malaysian Fisheries Society

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Abstract

This study mainly aims to calculate the socioeconomic determinants that predict older respondents. A total of *n*=310 respondent reported, and three Hos tested through Binary Logistic Regression Model 1-3, respectively. All Hos were rejected because all models fit and significant ($p<0.05$). Through Ho1 testing among older respondents involved in Civil Society Organisation (CSO), three predictor obtained – marital status, academic background and working status. Married status, secondary school and not-working status predicts less than 65.4 percent, 7.811-times and 3.275-time likelihood of older respondents involved in CSO (Model 1). The Ho2 tested among of older respondents in freshwater fisheries communities, two predictor obtained – marital status and academic background. Married status and secondary school predicts less than 72.4 percent and 8.276- time likelihood of older respondents in freshwater fisheries communities respectively (Model 2). The Ho3 test among of older respondents in brackishwater fisheries communities, two predictor obtained – academic background and working status. Secondary school and not working status predicts a 9.925-time and 5.566-times likelihood of older respondents in brackishwater fisheries communities respectively (Model 3). This study assumes that older respondents are active as they age. Hence, it is important to identify the socioeconomic backgrounds of active older women living in rural areas to develop effective programs and policies on active ageing.

Keywords: Active Ageing, CSO, Fisheries, Gender, Rural

Introduction

This paper highlights issues on feminism poverty, feminism for older adults, rural poverty, and the masculine fisheries economic sector. The fisheries community in this paper refers to remote and rural areas in Malaysian coastal regions (mainly the people involved in the brackish water fisheries economic sector) and freshwater areas (mainly the people involved in the freshwater fisheries economic sector). However, the fisheries activities are too male-dominated (Satapornvanit, 2018; Cliffe & Akinrotimi, 2013) which increases the death and

severe accident risk that may leave men vulnerable and disabled (Zainalaludin et al., 2017; Bondad-Reantaso et al., 2008), and left behind many younger single mothers who are poor and vulnerable too. Due to low education, women in fisheries communities are usually housewives without financial security and are fully dependent on their husbands for their livelihood (Saidi et al., 2021; Wahab et al, 2018). The masculinity of the fisheries sector, low education, traditional gender roles, and remote rural areas with fewer economic infrastructures cause high incident of feminism poverty. The longer lifespan of women compared to men increases the likelihood of older single women than older single men (feminism for older adults) in any community (United Nations, 2019; WHO, 2007), and these older women are generally poorer than older men (feminism poverty) especially in rural areas (Zainalaludin et al., 2021; Paz et al., 2018).

In Malaysia, about half (48.11%) of rural communities consist of women, and 52.54 percent of older people in rural communities are women (DoSM, 2020). In 12.4 percent of rural residents are poor (DoSM, 2020) due to poverty being a common issue globally in rural areas (Rodríguez-Pose & Hardy, 2015). Women are typically associated with the caregivers of the children and older family members, while men are the breadwinners (Lee & Lee, 2018). Thus, many men work in urban areas instead of rural areas to earn a living for their families. Nevertheless, fishermen are working in rural areas, dominated by men with high risk of accidents. Thus, many poor older women in fisheries community, and hard for these poor women to earn income in masculine economic sectors. Therefore, aging and poverty among women in fisheries community need to be addressed (Zainalaludin et al., 2022; Saidi et al., 2021).

This paper focuses on older Malaysian rural women involved in Civil Society Organizations (CSO) and highlights their involvement as indicators of active aging because they participate in various activities in the community to avoid loneliness and feel accepted in society for good well-being. Besides active socially, they may have business opportunities to sell something or get involve in generating income activities for their living. This paper assumes active participation in CSO may help poor older women in financial and social security. It is very important for Malaysian older rural women to active in CSOs' activities to remain empowered, productive, and reduce the stress of feeling isolated. Thus, this paper aims to achieve four research objectives (RO) as follows:

i) to profile the respondents by two age groups (younger and older) (RO-1)
ii) to calculate the significant socioeconomic determinants that predict older respondents (RO-2).

Literature Review

Active Ageing and Ageing Nation

The term "active" describes ongoing engagement in social, economic, cultural, and political issues; to achieve the goal of 'aging in place' (OECD, 2015). Additionally, active ageing extends life and lowers the rate of disability in adults (Foster & Walker, 2021). Older adults who are retired or live with a disability can remain active contributors in society and manage their lives actively, busily, and independently. This paper assumes that the respondents are active because of their involvement in CSO. One of the methods to empower older rural women economically and socially is to ensure that they are active. The components of active aging

consist of social activities, economy, health and social services, behavior, personal, and physical environment (Paúl et al., 2012). Active aging depends on a variety of determinants or influences that surround individuals, families, and nations (WHO, 2002). Understanding the evidence about the determinants may help policymakers design policies and programs that work for older adults. The socioeconomic determinants suggest that all factors are good predictors of how well both individuals and the population age. Throughout their lives, individuals may benefit from active aging by realizing their potential in social, economic, health, social services, behavioral, personal, and physical environments (Paúl et al., 2012). This may also enable them to participate in society while receiving the necessary protection, care, and security.

A rapid trend of population aging is due to a drop in the percentage of children and young adults and an increase in the number of persons 60 years old and older are currently occurring around the world (Fang et al., 2020; Obi et al., 2013). Malaysia, like many other countries, is experiencing rapid growth in its ageing population. The proportion of older people in 2022 will be 11.1 percent and is expected to reach 15.3 percent in 2030 (DoSM, 2022). The increased number of older adults in Malaysia will have an impact on national socioeconomic development. The biggest concern in the increasing population of older people is the demand for healthcare services and social security benefits (McMaughan et al., 2020; Barikdar, et al., 2016). This may be due to older adults being associated with serious diseases (Atella et al., 2019; Backes et al., 2008), high vulnerability, and the need for proper attention to increase resources (Sangeetha & Samuel, 2018; Beard, et al., 2016), especially in rural areas.

Besides viewing older people as a burden on society, active aging is a solution to sustain wellbeing and to continuously become independent and self-reliant in society (WHO, 2002). Active aging is a widely accepted strategy for assisting older adults to have independent lives that are healthy, productive, safe, and meaningful. It calls for work on three main fronts which are security, participation, and health (Sangeetha & Samuel, 2018; Paúl et al., 2012). Thus, the World Health Organization (WHO) defines "active aging" as the process of maximizing possibilities for health, involvement, and security (WHO, 2002). More optimistic views of healthy aging as the norm are being influenced by the anticipated future compression of morbidity and disability into a shorter period of life with increased healthy or disability-free life expectancy (Sangeetha & Samuel, 2018). Active in CSO activities, older people keep themselves busy by leading and guiding the younger group, contributing ideas, and involving themselves in the decision-making process. These activities may help them remain socially active.

The aging process, through physical, social, emotional, and physiological are distinct by sex disaggregation (DOSM, 2022; United Nations, 2019). Older women generally experience distinct issues than older men (Koenig, 2018). Growing old in a patriarchal system presents several difficulties for women because they are marginalized and vulnerable in society (Saidi et al., 2021; Zainalaludin et al., 2017), especially in rural areas where many older people end up either living alone or living with their friends and experience Empty Nest Syndrome when children leave their parents (Shahar et al., 2019; Masud & Zainalaludin, 2018). Mostly, older women are found to suffer from financial insecurity (Masud & Zainalaludin, 2018; Rasool & Salleh, 2012). Being self-sufficient and financially independent

helps older adults, especially women, feel more confident, which is recognized as one of the aspects of active ageing (WHO, 2002). Successful aging equals active aging where older people can be active physically or intellectually and remain in roles in society, such as involvement in new interests, activities, hobbies, roles, and relationships, including involvement in CSOs (Zainalaludin et al., 2022; Mansuri & Rao, 2012). Besides being empowered socially and economically through their involvement in CSO (British Council, 2017; FAO, 2017), the Empty Nest Syndrome can be avoided through active involvement in society.

Feminization of Poverty

The feminization of poverty explains the scenario of poverty among rural women in fisheries communities. It refers to five situations - i) women are generally poorer than men, ii) poor women are poorer than poor men, iii) the incidence of poverty among women is higher than among men, iv) the poverty incidence increases more among older women than men, and v) more women than men are in hardcore poverty, marginalized, and without social security. First, rural women are generally poor as compared to rural men. As stated by McLanahan and Kelly (2006), and Veeran (2000), feminization of poverty is related to the drop in women's income below the poverty line, which makes them economically vulnerable to poverty. The masculinity of the fisheries economic sector also contributes to the feminization of poverty because women cannot participate directly in this sector, resulting in unequal economic opportunities for women, especially in rural areas (Chulu, 2015). There is a gender income gap, where women generally receive lower payments than men in any sector (Ismail & Jajri, 2012), leaving them without financial security in old age (Morris, 2007). Therefore, women are generally poorer than men.

Second, poor women are poorer than poor men because mostly rural women are housewives with no income (Bradshaw et al., 2019; Chulu, 2015), and low educated (Lekshmi et al., 2022; Sivakumar & Usha, 2016). Rural women generally depend on their husbands for their livelihood in fisheries communities. If the husband dies or they get divorced, they will be in hardcore poverty. Third, high incidence of poverty among women compared to men because rural women are mostly housewives, and if they work, they usually earn less or have no income during their productive age (Ismail et al., 2015; Masud et al., 2008). The poverty incidence among rural older women tends to occur at retirement age (Mohd et al., 2018; McLanahan & Kelly, 2006), leaving them without financial security in old age (Morris, 2007). Fourth, the poverty incidence among older women increases higher than the poverty incidence among older men in rural areas (Holmes & Jones, 2011). Many reasons contribute to this phenomenon. Several studies suggest that older women face more challenges than older men (Tuohy & Cooney, 2019; Hamid, 2015) because they live longer than men, participate in household chores, and work for low wages or no pay at all (Zainalaludin et al., 2020; Chant, 2012), and if women earn, they earn less than men (Ismail et al., 2015). High risk for married women to become single women in fisheries communities. Thus, numerous studies have shown that older women, particularly female heads of households (Masud et al., 2015), are more likely to be impoverished (Ahmad et al., 2016; Siegenthaler, 1996) than younger women.

Finally, poor and older women are often marginalized, in hardcore poverty without financial security, especially in masculine economic sectors, as not many poor women can participate in such industries. They have no allocation for medical expenses and health services (Hartline-Grafton & Dean, 2017; Seligman et al., 2010). According to studies by Ismail et al (2015), and Masud et al. (2008), older women are twice as likely to live in poverty as older men.

The feminization of poverty, combined with aging, results in the feminization of poor older adults and a gender income disparity (Paz et al., 2018; Hafford-Letchfield et al., 2017). They deserve a good life wellbeing towards the end of their years, living happily and productively in their old age. Policies and programs should give extra attention to these older and poor women, at least for their services as mothers to Malaysians. Thus, poverty eradication programs should be gender sensitized, especially in masculine economic sectors like fisheries.

Methodology

Population and Sampling

There are an estimated 14,601 traditional fishermen and 20,249 aquaculture operators in Malaysia (DOF, 2021). With an estimated number of four to six household members (Zainudin et al., 2019; Asok & Saranya, 2016), the fisheries community population can be estimated to be around 209,100 members. From this population, almost 48 percent of members are rural women (100,368) according to DOSM (2020), that 48 percent of the rural population in Malaysia are women. According to Krejcie and Morgan (1970), for N=100,368, the sample size is n= 375 respondents.

In this paper, Peninsular Malaysia is divided into two zones: the Western and Eastern Zone. One state was randomly sampled for freshwater fisheries and one state was randomly sampled for brackishwater fisheries areas in each zone. The four states that were randomly sampled by each zone are Terengganu - Eastern Zone Freshwater (EZFW), Johor - Eastern Zone Brackishwater (EZBW), Negeri Sembilan - Western Zone Freshwater (WZFW), and Perak - Western Zone Brackishwater (WZBW). One district was randomly sampled from each state respectively - Hulu Terengganu (Terengganu) for EZFW, Jelebu (Negeri Sembilan) for WZFW, Manjung (Perak) for WZBW, and Mersing (Johor) for ESBW. Jelebu and Hulu Terengganu focused on freshwater fisheries areas, while Manjung and Mersing focused on brackishwater fisheries areas. Thus, n=100 respondents were sampled in each district, and in total, 400 respondents were randomly sampled in this paper.

Questionnaire Development and Data Collection

A specially developed questionnaire consisting of respondents' profile, CSO backgrounds, CSO activities, a scale of leadership (adapted from Twenty Reproducible Assessment Instrument for New York Work Culture) by Phillip and Harris (1995), Malaysian Personal Household Wellbeing scale by Jariah (2007), WHO-5 General Well-being by Bech et al. (2003) and Empowerment Scale (Nikkah & Redzuan, 2010; Labonté & Laverack, 2008; Kabeer, 2005; Malhotra et al., 2003), was used to collect the data. Nevertheless, this paper reports only on the respondents' profiles - the socioeconomic backgrounds. The questionnaire was approved by the Ethics Committee for Research Involving Human Subjects at Universiti Putra Malaysia (Ref: JKEUPM-2020-281).

A meeting with all Penghulu (sub-district leaders) for all the sampled districts was organized through their respective District Offices. A briefing on the research was delivered during the meeting. The Penghulu then advised on their sub-district fisheries villages. Next, another meeting with all the Heads of Villages was organized for research briefing, sampling, and research cooperation in identifying the final respondents. One data collection meeting with sampled women CSO leaders in respective sub-districts was scheduled in each sampled district organized by the Penghulu.

Null Hypotheses and Binary Logistic Regression Model

To achieve RO-2 (to calculate the significant socioeconomic determinants that predict older respondents), three Hos were tested. First, H_{O1} (no socioeconomic determinants of older respondents in fisheries communities) was tested through BLR Model 1. The dependent variable (DV) =older=1, and younger=0. The independent variables (IVs) are marital status, academic background, working status, and poverty status. The BLR Model 1 is as follows: -

BLR Model 1 (Fisheries) - $\text{Ln } Y_{\text{older respondents in fisheries}} = a + b1_{\text{marital status}} + b2_{\text{academic background}}$ $b3_{\text{workingstatus}} + b4_{\text{poverty status}}$

Notes: -

i) DV (older=1, younger=0)
ii) IVs (Marital Status, Academic Background, Working Status, Poverty Status)

The second hypothesis for RO-2, which is H_{O2} (no socioeconomic determinants for older respondents in freshwater fisheries communities), was tested using BLR Model 2. The DV=older=1, younger=0. The IVs are marital status, academic background, working status, and poverty status. The BLR Model 2 is as follows: -

BLR Model 2 (Freshwater) - $\text{Ln } Y_{\text{respondents in freshwater}} = a + b1_{\text{marital status}} + b2_{\text{academic background}} +$ $b3_{\text{working status}} + b4_{\text{Poverty status}}$

Notes: -

i) DV (older =1, younger =0)
ii) IVs (Marital Status, Academic Background, Working Status, Poverty Status).

The second hypothesis for RO-2, which is H_{O3} (no socioeconomic determinants predict older respondents in brackishwater fisheries rural areas) is tested using BLR Model 3. The DV is older=1, younger=0, in BLR Model 1 and 2. The IVs are marital status, academic background, working status, and poverty status. The BLR Model 3 is as follows: -

BLR Model 3 (Brackishwater) - Ln $Y_{\text{older respondents in brackishwater}} = a + b1_{\text{maritalstatus}} + b2_{\text{academicbackground}} + b3_{\text{workingstatus}} + b4_{\text{Povertystatus}}$

Notes: -

i) DV (older=1, younger=0)

ii) IVs (Marital Status, Academic Background, Working Status and Poverty Status

Result and Discussion

Respondent Profile by Age Groups

The profile of respondents refers to the profile of rural women involved in rural CSOs in Malaysia, and this subtopic aims to achieve RO-1 (to profile the Malaysian rural women involved in CSO by age groups – younger and older). Besides leaders, the Malaysian rural women involved in CSO in this paper are also members of the CSO. In total, *n*=310 data were collected from 2020-2022. The mean age of the respondents was 50.45 (SD=12.13) in 2022. About three-quarters (76.1 percent) of the respondents in this paper were aged < 60 (younger) and 23.9 percent were aged ≥ 60 in 2022 (older) (Table 1). Although almost three-quarters of the Malaysian rural women involved in CSO reported in this paper were from a younger group, they are generally at a mature mean age, which was the mean age=45.83 years old, and among the older age groups the mean age= 65.22 years old (Table 1).

Table 1
Respondent Profile by Age Groups (n=310)

Variables		**Younger**		**Older**		**Total**	
		n	**%**	***n***	**%**	***n***	**%**
Location **(*n*=310)**	Hulu Terengganu	64	74.4	22	25.6	86	27.7
	Jelebu	57	77	17	23	74	23.7
	Manjong	80	76.9	24	23.1	104	33.6
	Mersing	35	76.1	11	23.9	46	14.8
Water System **(*n*=310)**	Brackish	104	74.8	35	25.2	139	44.8
	Freshwater	132	77.2	39	22.8	171	55.2
Marital Status **(*n*=309)**	Married	180	78.9	48	21.1	228	73.8
	Single	55	67.9	26	32.1	81	26.2
Academic Background **(*n*=300)**	Primary and never school	30	51.7	28	48.3	58	19.3
	Secondary	150	79.4	39	20.6	189	63
	Tertiary	48	90.6	5	9.4	53	17.7
Working Status **(*n*=299)**	Not working	118	70.7	49	29.3	167	55.9
	Working	112	84.8	20	15.2	132	44.1
Poverty Status **(*n*=283)**	Non-poor	47	75.8	15	24.2	62	21.9
	Poor	168	76	53	24	221	78.1

Household Income	Mean (SD)	RM1,797.69 (RM1,378.95)	RM1,863.65 (RM2,156.94)	RM1,812.38 (RM1,580.25)
Age	Mean (SD)	45.83 (9.85) years old	65.22 (4.43) years old	50.45 (12.13) years old

Usually after getting married, rural women in Malaysia start joining the CSO in their village to socialize. It is a 'hidden rule' for married women to get involved in the CSO to be accepted in the community. Nevertheless, it is hard for them to active in the CSO due to dependent children and many household chores at their younger ages (Women United Nations, 2019). At a mature age, rural women have fewer dependent children, so they have more time to be active and have the potential to become leaders in the future (Lyon et al., 2017; Kelly, 2007).

The majority (55.2%) of them are from freshwater fisheries areas (Table 1). The sampling of the respondents between freshwater and brackishwater fisheries areas was equal. Nevertheless, high responses were received from the freshwater fisheries areas which may reflect that rural women CSO in freshwater fisheries areas are more active than in the brackishwater fisheries areas. In 2017, coastal areas are usually associated with brackishwater fisheries and are active in the tourism industry (Asian Development Bank, 2014). Thus, many are involved in tourism to generate income for a living besides fisheries economic activities, especially among the younger group and women (International Labour Organization, 2013). Women usually involve in seafood restaurants, homestays, food processing businesses, and hand-craft businesses in coastal areas (Setiawan, 2022; Tomohardjo & Ananda, 2020) to support the tourism industry. Thus, this may cause their participation in this study to be slightly lower than rural women in freshwater fisheries areas.

A high percentage (48.3%) of the respondents have primary education and have never attended school level of education. Of this percentage, only 9.4 had a tertiary level of education, and 20.6 percent had a secondary level of education (Table 1). As compared to not schooling and primary school, secondary school education is considered a 'high' level of academic background among rural women which is generally associated with a low level of education (Zainalaludin, 2012).

The respondent in this paper is a majority (78.1%) in poor status of the household income category. The Poverty Line Income (PLI) of RM2208 (DoSM, 2020) was used to categorize respondents into poor and non-poor groups. The respondents is also the majority (73.8%) married. Usually 'married' status reflects a 'not-poor' household, 'single' status reflects the poor status of rural women households (Thandar et al., 2020).

Socioeconomic Determinants of Older Rural Women's Involvement in CSO

This sub-topic aims to achieve RO-2 (to calculate the significant socioeconomic determinants that predict older respondents in CSO). Three H_{Os} were tested to achieve RO-2 - H_{O1} (no socioeconomic determinants predict older respondents in fisheries rural areas [through BLR Model 1]); H_{O2} (no socioeconomic determinants predict older respondents in freshwater fisheries rural areas [through BLR Model 2]); and H_{O3} (no socioeconomic determinants of older respondents in brackishwater fisheries rural areas [through BLR Model

3]). The RO-2 is important to understand the active aging profile among respondents in the fisheries society.

Wald Chi-square in Table 2 reports on n=310. The H_{O1} had been rejected because BLR Model 1 fit and was significant (p<0.05) to predict older respondents in fisheries rural areas regardless of the water system. In 20.3 percent of the variance in the DV explains by the IVs in BLR Model 1. The dependent variable (DV) = older respondents involved in CSO=1, younger respondents involved in CSO=0. The independent variables (IVs) are marital status, academic background, working status, and poverty status. Three significant indicators were obtained in BLR Model 1 - marital status, academic background (secondary/ primary & never schooling), and working status. Married status predicts less than 65.4 percent likelihood (odd=0.346) of respondents' involvement in CSO in fisheries rural areas (Table 2). In other words, older respondents is associated with a single marital status – not married, widowed, or divorced. Single marital status is normal among older women because women live longer than men (Jia & Lubetkin, 2020), so many older women than older men in any society. Single and older women usually get involved in communal activities to keep busy and be accepted in their social circle (Gorman, 2017). Regardless water system, older respondents seem are single women. Active participation may help them avoid loneliness (Kharicha et al., 2017), to get market for their micro-business products (Phillipson et al., 2020), ensure food security (Gajda & Jeżewska-Zychowicz, 2021), and provide social security (Babu, 2022).

Primary school/never schooling and secondary school are significant predictors. On the primary/never school level of academic background, secondary school academic background predicts a 7.811-time likelihood of older respondents involved in CSO. A secondary school academic background is an indicator that older respondents are involved in fisheries CSOs. The ‘not-working" status predicts a 3.275-time likelihood that older respondents involved in fisheries CSOs. The ‘not working’ among rural women usually refers to housewives who are not involved in the formal or informal employment sector. They don’t have any permanent source of income and depend on their husband or family members for living (Pilgeram & Amos, 2015). Especially among older rural women, the ‘not-working’ status is normal in Malaysia (Mohd, et al., 2018). They are usually poor, with low academic backgrounds (Zainalaludin, 2012), living alone, dependent on welfare services (Hernes, 2018) and involved in CSO for social and financial support (Heylen et al., 2020). This paper concludes in Malaysian rural fisheries areas, been single with a secondary school academic background and not working are predictors of active older rural women through their involvement in CSO.

Table 2
Wald Chi Square Statistics Predict Older Rural Woman Involve in CSO (Malaysian Rural Fisheries Area) (n=310)

	B	S.E.	Wald	df	Sig.	Exp(B)
Marital status (Married =1)	-1.061	0.358	8.808	1	**0.003**	**0.346**
Primary & never school (1)			18.161	2	**0**	
Secondary (2)	2.056	0.597	11.871	1	**0.001**	**7.811**
Tertiary (3)	0.67	0.541	1.535	1	0.215	1.955
Working status (not working=1)	1.186	0.347	11.718	1	**0.001**	**3.275**
Poverty status (non-poor=1)	0.564	0.383	2.172	1	0.141	1.757
Constant	-2.139	0.58	13.589	1	0	0.118

Note: Omnibus $p<0.05$

The Wald Chi-Square in Table 3 reports on $n=171$. H_{O2} was rejected because BLR Model 2 fit and significant (Omnibus $p<0.05$) in predicting older respondents in freshwater fisheries. In 25.7 percent variance in the DV is explained by the IVs in BLR Model 2. The dependent variable (DV) (older respondents=1, younger respondents=0). The independent variables (IVs include marital status, academic background, working status, and poverty status. The significant predictors are marital status and academic background. The IVs in BLR Model 2 (freshwater) explain the DV at a higher percentage than the DV in BLR Model 1 (fisheries).

Married status predicts less than 72.4 percent likelihood (odd=0.276) for older respondents in freshwater fisheries rural areas (Table 3), and this percentage in freshwater community is higher than the percentage in BLR Model 1 for general fisheries communities. In other words, older respondents in freshwater fisheries are less likely to be married compared to the fisheries community as a whole. This phenomenon is normal in a fisheries society. In addition to the masculinity of FAES, women may be single much earlier than women in other communities associated with less masculine economic sectors. Husbands in fisheries may be involved in fatal accidents during fishing, or the wife may live much longer than other women due to the clean, beautiful, and conducive environment of freshwater rural fisheries areas (Deb et al., 2015).

Table 3
Wald Chi Square Statistics Predict Older Rural Woman Involved in CSO (Freshwater Fisheries Rural Areas) (n=171)

	B	S.E.	Wald	df	Sig.	Exp(B)
Marital status (Married =1)	-1.287	0.501	6.602	1	**0.01**	0.276
Primary & never school			10.572	2	**0.005**	
Secondary	2.113	0.872	5.874	1	**0.015**	8.276
Tertiary	0.751	0.839	0.8	1	0.371	2.118
Working status(not-working=1)	0.751	0.486	2.385	1	0.123	2.118
Poverty status(non-poor=1)	0.507	0.652	0.604	1	0.437	1.661
Constant	-2.019	0.832	5.888	1	0.015	0.133

Note: Omnibus $p<0.05$

Primary/never-schooling, and secondary-school academic backgrounds are significant predictors in BLR Model 2. At the primary/never school level of academic background, secondary school academic background predicts an 8.276-time likelihood of older respondents in freshwater fisheries communities, and the time of likelihood is higher than in BLR Model 1. A secondary-school academic background is an indicator of older respondents in freshwater fisheries. This background of education explains why almost half of them are housewives and their households are mainly in poverty. According to Zainalaludin (2012), rural women are always associated with low academic background and poverty. In Malaysian rural freshwater fisheries areas, being single, having primary school/never schooling, having secondary-school education and not being employed are predictors of older respondents being involved in CSO. These indicators can be associated with active ageing.

The Wald Chi Square in Table 4 reports $n=139$. The H_{O3} has been rejected because BLR Model 3 fits and is significant (Omnibus $p<0.05$) to predict older respondents in brackishwater fisheries rural areas. In 25.7 percent variance in the DV is explained by the IVs in BLR Model 3. The dependent variable (DV) (older respondents=1, younger respondents=0). The independent variables (IVs) are marital status, academic background, working status, and poverty status. Two significant indicators obtained are academic backgrounds and working status.

Upon primary/never school level of academic background, secondary school of academic background predicts a 9.925-time likelihood of older respondents in brackishwater fisheries rural areas. This likelihood is higher than in BLR Model 1 and 2. A secondary-school academic background is an indicator of an older respondents in fisheries rural areas, especially in brackishwater society. This background of education explains why almost half of them are housewives and their households mainly live in poverty. According to Saidi et al., (2021), and Zainalaludin (2012), rural women are usually associated with low academic backgrounds, housewives (Wahab et al., 2018), especially in brackishwater society because

brackish water societies located in rural and remote areas with less academic infrastructure (Nagaraj et al., 2017).

Working status as 'not working' predicts a 5.566-time likelihood of older respondents in brackish water fisheries rural areas in Malaysia. The 'not working' among rural women usually refers to housewives or those who don't have any permanent source of income for living and are always dependent on their husbands or family members for living. In Malaysian rural fisheries areas, being single, having secondary school education, and not working are predictors of older respondents involved in CSO, and can be associated with active ageing.

Table 4
Wald Chi Square Statistics Predict Older Rural Women Involved in CSO (Brackishwater Fisheries Rural Areas) (n=139)

	B	S.E.	Wald	df	Sig.	Exp(B)
Marital status (Married =1)	-0.824	0.555	2.21	1	0.137	0.439
Primary & never school (1)			8.582	2	**0.014**	
Secondary (2)	**2.295**	**0.884**	**6.741**	**1**	**0.009**	**9.925**
Tertiary (3)	0.603	0.72	0.701	1	0.402	1.828
Working status(not-working=1)	**1.717**	**0.523**	**10.754**	**1**	**0.001**	**5.566**
Poverty status(non-poor=1)	0.439	0.503	0.762	1	0.383	1.551
Constant	-2.364	0.869	7.396	1	0.007	0.094

Note: Omnibus $p<0.05$

Generally, this paper concludes that two predictors of older rural women involved in CSO especially in brackishwater fisheries community, are 1) being a single woman and 2) low academic background. Low academic backgrounds are usually associated with rural women (Zainalaludin, 2012). The single and older woman is referring to single mothers or never-married women. These two predictors are always associated with vulnerable older women in rural areas (Levasseur et al., 2020). CSOs work alongside government development and programs for poverty eradication (Appe, 2017). Nevertheless, rural women, especially older women, need different mechanisms to get involved in economic activities, especially through CSO participation (Madsen, 2015). Involvement in the CSO is a good mechanism for women to be socially and economically empowered (Golla et al., 2011). Nevertheless, there are many gender obstacles along the way that need to be addressed before older women can be assisted through CSOs.

Conclusion and Recommendations

This paper assumes that involvement in CSO is an indicator of active aging for older women. Therefore, the socioeconomic backgrounds that predict older women's involvement in CSO must be identified for future program and policy development on active aging. Two objectives are underlined, and three Hos tested in this paper. All Hos are rejected. The RO-1 is achieved,

and the descriptive statistics show that a total of *n*=310 data were collected from the year 2020-2022. The mean age of respondents was 50.45 years old (SD=12.13 years old) in the year 2022. About three-quarters of respondents are in the younger, and a quarter are in older age group. This paper recommends that since older and poor respondents are associated with rural strata, policies, and programs on active aging in Malaysia should encourage older rural women's participation in CSOs, especially among the poor and needy group.

The RO-2 obtained an average of three socioeconomic determinants of respondents' involvement in CSOs, which are marital status, secondary school education upon primary school of academic background, and not working status. When comparing between freshwater and brackishwater systems, marital status only inclines towards freshwater fisheries and not towards brackishwater fisheries in rural areas of Malaysia. A higher percentage (less likelihood) of them are married in brackishwater than in general fisheries rural areas. These findings conclude many older single mothers in freshwater fisheries rural areas. They may live longer, or their husband passed away earlier, or high divorce rate, or many of them never married. Older single mothers need extra attention to their social security and wellbeing. This paper recommends further studies in profiling single mothers in fisheries rural areas to capture the details of vulnerabilities they suffer. Besides, it can measures the CSO involvement as strategic tools for active ageing and to increase the wellbeing of these poor and older community members.

The academic background is significant in all three BLR Models. The likelihood of secondary school (compared to primary school) academic background is higher among older rural women in freshwater than in general fisheries communities, and in brackish water than in freshwater fisheries rural areas in Malaysia. These reflect in general, older rural women in brackishwater are more educated than rural women in freshwater fisheries areas. This paper recommends life-long learning and income-generating programs for all older women in fisheries rural areas in Malaysia, with emphasis given to freshwater areas. Low education is usually associated with poverty. Income-generating programs need extra focus on the academic level to develop lifelong learning for active aging and income-generating program modules friendly to rural women.

The non-working status only applies to older respondents from brackishwater fisheries and not to older respondents from freshwater fisheries areas. When comparing the work status of respondents from brackishwater fisheries and general fisheries areas, there is a higher likelihood from brackishwater than in general fisheries areas. Older women in brackishwater fisheries are more inclined to 'not-working' than in freshwater fisheries rural areas in Malaysia. This finding may reflect that the brackishwater is more rural than general fisheries in Malaysia, and less job opportunities in informal sectors for women and less market for enterprise products. This paper recommends that income-generating programs should be conducted in fisheries areas, with emphasize should be given to older rural women from brackish water fisheries areas through promoting eco-tourism and homestay industry.

Limitation

The findings of this paper are limited to three conditions which are i) involvement in CSO activities is assumed to be an active aging indicator, ii) the fisheries areas represent rural

areas in Malaysia, and iii) involvement in CSO promotes the social and economic well-being of rural women, especially older adults.

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