

Youth participation in the Sago industry: A Malaysian case study

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Received: 19 September 2022; Accepted: 11 January 2023; Published: 24 February 2023

Abstract

Studies have shown that today's youth are shunning away from agricultural activities leading to workforce shortages to sustain production. The present study includes a survey of 200 youths involved in the sago industry in Malaysia's four major districts of Sarawak to understand their general perceptions of the sago industry and employment patterns in both sago and non-sago. Results showed that a proportion of the youth respondents were employed either full-time or part-time, with more than half working full-time in the private sector. Of great concern, about 25 per cent of them are not employed full-time. Nevertheless, approximately 70 or 35 per cent of the youth respondents admitted that they are engaged in part-time sago-related activities. Generally, rural youths have favourable attitudes toward the sago industry. The level of education is an essential factor influencing youths' full-time employment in the sago industry. Whereas for part-time employment in the industry, age was a significant determinant.

Keywords: Agriculture, Sago industry, unemployment, youth, youth participation

Introduction

Agriculture continues to significantly stimulate the economy in many countries worldwide, including Malaysia (D'Silva et al., 2010). The importance is more prevalent among rural communities. For example, the socioeconomic status of rural people can be improved by achieving the objectives of increased productivity, job opportunities, and income redistribution capable of delivering agricultural labour (Adisa, 2016). Over time, Malaysia's agriculture sector remains secondary to other more popular sectors, such as the manufacturing and services sectors. The agricultural sector remains unpopular due to its image as a challenging job with low wages that do not, in particular, guarantee a promising future for those with tertiary education (Abdul Aziz & Norhlilmatusun, 2013; Othman & Ishak, 2009). Despite its great potential to improve people's livelihood, particularly in rural areas, agriculture generally faces acute labour shortages.

The known fact is that Malaysia has a relatively high youth unemployment rate. The Covid-19 pandemic has worsened the youth unemployment rate. One might wonder why these unemployed youths were not brought to the market to address the problem of labour shortages, particularly in labour-intensive plantation-type farming (Neorehan et al., 2016; Lee & Zhang, 2021). Additionally, most farmland is abandoned due to a lack of workforce (Abdul Aziz & Norhlilmatusun, 2013). Despite its sizeable economic potential, sago is one of the agricultural

industries challenged by labour shortages. In this industry, labour supply is generally heavily dependent on older populations or youth working part-time. Given the issue of manpower, it is becoming more difficult for the industry to survive and maintain its competitiveness and, more importantly, to meet both the increasing demands from local and international markets. To date, limited studies have examined labour supply issues in the sago industry from a social and behavioural point of view, especially among young people. Very little is known about their view of the industry and their degree of commitment to supporting the labour supply side of the industry. Therefore, this paper aims to provide some insights into the issue of trends in youth employment in the sago industry, their perception of the sago industry and their involvement in activities related to the sago industry.

Literature review

Sago industry in Malaysia: A brief introduction

Sago palm, or *Metroxylon sagu Rottb*, order Arecales, from Palmae family and Calamoideae subfamily, is an indigenous plant commonly found in the world's peatland regions. It is commonly grown in wilderness swampy areas in Malaysia, Indonesia and New Guinea. In Malaysia, this crop is found mainly in the wild or grown in the Oya-Dalat, Mukah, Pusa-Seratok, Igan and Balingian areas of Sarawak (Chew et al., 1998). Sago produces high-yield dry starch, approximately 150-300 kg per plant (Wahed et al., 2022). Sago starch is the crop's main raw product, serving as a critical ingredient for local and foreign food industries. In 2021, the state of Sarawak was estimated to have exported 37,884 tonnes of sago starch worth RM78.3 million (Wong, 2021). Sago's export value is expected to reach RM100 million by 2030 (Tawie, 2019). Nonetheless, technological advancement alone will not guarantee the industry's target performance without having the right amount of manpower support.

The sago industry in Mukah-Dalat requires manpower support for upstream and downstream activities. The upstream activities include planting, maintaining, harvesting, and transporting sago logs. Meanwhile, the downstream activities involve activities such as processing the sago logs into sago powder and wholesale and retailing finished products. Some of these tasks can be labour-intensive and therefore require an adequate and constant supply of manpower to ensure production support. Nevertheless, the industry remains confronted by unreliable labour supply despite the availability of unemployed local youth. This perpetuating problem has become one of the main concerns of the state government of Sarawak in the effort to maintain and improve the productivity of the sago industry.

Factors affecting youths' perceptions and participation in agricultural activities

Sago as a commercial crop has received significant attention from scientists who studied the plant from multiple aspects, from the testing soil suitability (Bintoro et al., 2018; Ehara et al., 2018; Yumna et al., 2019; Wasli et al., 2021; Yan et al., 2022) to the experimenting of potential new commercial hybrids (Kjær et al., 2004). However, despite the importance of understanding the sago industry from a social perspective, very few studies are available. It was not until recently that scholars in Malaysia's social and behavioural disciplines began investigating various issues relating to communities involved in the sago industry. For example, Ahmad Ishak

et al. (2017) on gender roles in the sago industry due to the sago crop commercialization programs, Yaakub et al. (2018) explored the sustainable livelihood of sago farmers, Taibi et al. (2018) investigated women's involvement in the marketing of finished sago products, Haslina Hussin et al. (2018) studied the function of change agents in disseminating information among local farmers on sago plantation projects, and Ishak et al. (2021) investigated the determining factors influencing the Melanau youth's involvement in the production of sago.

Given that the sago industry is an agricultural economic activity, the labour supply problem in the Malaysian context is likely to be almost similar. Although young people make up a large pool of potential labour force for the country, making agricultural activities appealing to them is a big challenge due to the competition and attraction to other economic sectors. It has been well-established that attracting and retaining young people is a global challenge in the agricultural sector (Mukembo et al., 2014). Youths in Malaysia often view occupation in agriculture as unattractive (Abdullah et al., 2012) and physically demanding (Amizi et al., 2016). Studies have argued that young people are reluctant and less likely to work in agriculture because there is a conventional view that agricultural work is hard, the pay is low and does not guarantee a bright future (Abdul Aziz & Norhlilmaturun, 2013) and that agriculture is not a qualified and desirable career (Abdullah et al., 2012).

Relating to a study done by Ishak et al. (2021) on Melanau youth participation in the sago industry, it was found that most youth that engages in the industry work as part-timers, which is a unique characteristic for the sago industry compared to other crops such as oil palm, paddy and cocoa. This work mode setting among youths, where the industry comprises a more part-time mode of work than full-time, is considered to face problems such as less yield and difficulties in land usage optimization (Haiguang et al., 2013). However, it should be noted that the problem of attracting youths to the agricultural sector does not occur exclusively in Malaysia. It is an omnipresent phenomenon that is present in many countries. For some, agricultural work is perceived "as being for rural people, uneducated people, people who are poor or old or who have no other options except for doing farming work" (Anor, 2012, p. 1 in Baliyan, 2015). Agriculture in India, for example, is potentially the largest employment-providing sector in the country, but it does not stop the issue of unemployment among rural Indian youth (Ray et al., 2022). Consequently, rural youths are highly unemployed, forcing them to migrate to urban areas for low-paid employment (Gangwar & Kameswari, 2016; Rathore et al., 2022). The migration of young people to urban areas in search of work has inadvertently reduced human resource availability for agricultural activities (Swaminathan, 2007 cited in Gangwar & Kameswari, 2016).

Methodology

This study adopts the quantitative approach using a survey method to collect data. The survey was carried out in the Mukah, Dalat, Matu and Daro areas, which are Sarawak's four main sago-producing areas. A total of 200 respondents between the ages of 15 and 30 participated in the study. The standardized questionnaire used in this study contains several sections that include respondents' socio-demographic background, involvement in the sago industry, perception of the sago industry, and their inclination to activities related to it.

Of the 200 respondents, a considerable number are between the ages of 17 and 18 (22.5%). Approximately 126 (63%) of these are males, and 74 (37%) are females. Concerning

race, 90 per cent of the respondents are Melanau, and the rest are either Malays or Ibans. This is unsurprising as Melanau have a long tradition of engaging in the sago industry. As for the respondents' religion, most are Muslim (61.5%), while 30% are Christians, and 9.5% subscribe to other beliefs. Over 80 % of the respondents hailed from the so-called sago-belt areas, namely Matu, Daro, Dalat, Mukah, and the rest came from other regions such as Sibul, Betong, Bintulu, Kuching, and Miri. Regarding marital status, 76% of respondents reported being single, 21% were married, and about 3% were divorcees or widows.

Before the survey was conducted, the questionnaire was pre-tested among five youths with similar characteristics to the target population. Issues relating to the instrument were dealt with accordingly. Twelve items developed for study purposes assessed youth perception of the sago industry. Samples of the items include "*Saya berasa malu jika diketahui datang dari keluarga yang mengusahakan sago / rumbia* (I feel ashamed if people know that I come from a family engaged in the sago industry)" and "*Saya boleh berjaya dalam industri sago / rumbia* (I can succeed in the sago industry)." Before carrying out any further statistical analysis, the negatively worded items 2, 5, 7, 8, 10, and 11 were recorded. Then all 11 items were checked for internal consistency. For those 11 items, Cronbach's alpha was 0.737, which is considered acceptable.

Results and discussion

The present study has three main objectives: examining the trends in youth employment, their perceptions of the sago industry and the degree to which they are engaged in the industry. Therefore, the following section reports and discusses the main findings accordingly.

Trends in youth employment in Sago sector

To study the trends in youth employment in the sago sector, respondents were asked about their employment status (full-time and part-time) as well as the sector category that they are involved in (public sector; private sector; self-employed in sago industry; self-employed in the non-sago sector; schooling; and unemployed). Figure 1 is a useful starting point to examine youth employment in the area. The data shows that 47% of the youths in the area are employed as full-time workers (26% working in the private sector; 8.5% self-employed in the sago industry; 7.5% self-employed in the non-sago industry; and 5% in the public sector). The data shows a healthy inclination to work among the youths in the area. However, despite the high number of employment, unemployment among the youth continues to become an issue. The data shows that about 53% of the youth respondents in the area are not working full-time. Only two reasons are identified through the survey: they are still at school or simply unable to secure a full-time job. This information leads to another interesting discussion: since the youths are not participating in the workforce full-time, do they tend to participate in part-time employment in the sago industry instead?

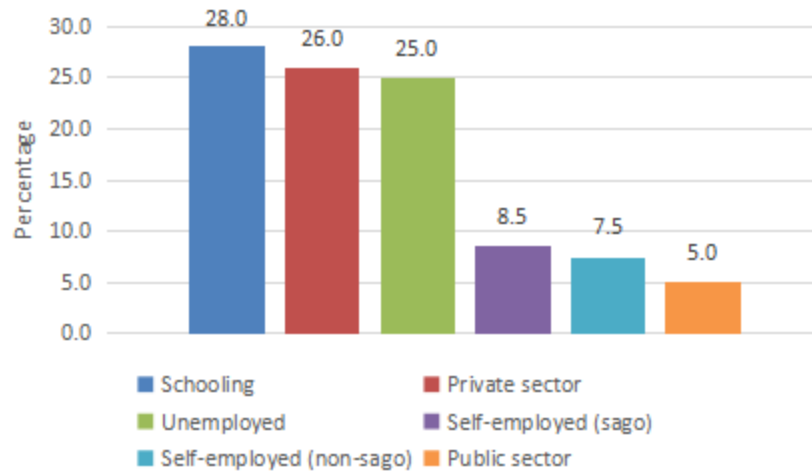


Figure 1. Youth full-time employment (n =200)

Figure 2 provides information about their part-time employment data. Out of the 200 respondents surveyed, about 35% are participating in part-time employment in the sago industry compared to only 4.5% working part-time as a self-employed in the non-sago industry and 8% working part-time in the private sector. The data suggests a tendency for the youths in the area to participate in part-time employment in the sago industry compared to the other part-time jobs. This result contests the existing preconceived idea relating to employment in agriculture that is facing challenges due to competition from other economic sectors (Mukembo et al., 2014). It seems that the sago sector poses an appeal to the youth, even if only as part-time workers. This information is interesting as it leads to the question: do they participate as part-timers in the sago industry as their second source of income, or are they taking up the part-time job in the industry since they have already been involved in the industry as their primary source of income?

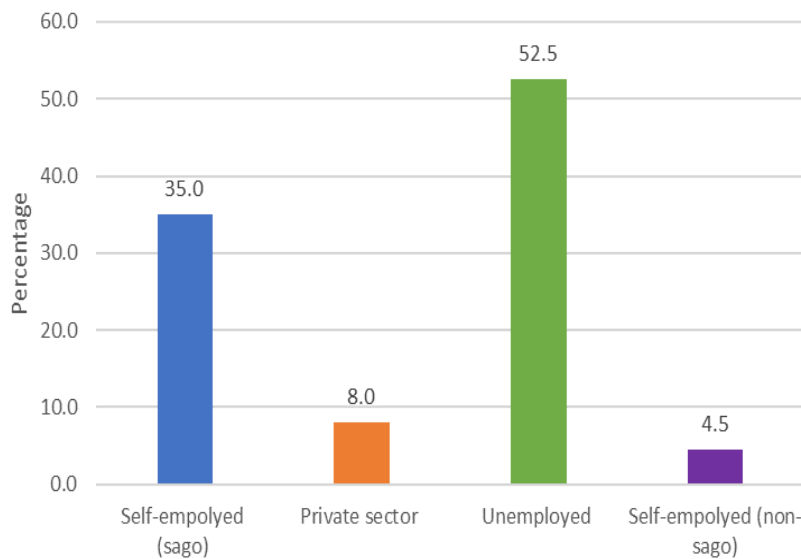


Figure 2. Youth part-time employment (n =200)

In order to answer this question, a crosstabulation table is produced (refer Table 1). It shows a crosstabulation table between youths working full-time and those working part-time in Mukah, Dalat, Matu and Daro. Of the 200 respondents, 47% admit they take up part-time employment. Further investigation shows 35% of them take up a part-time job in sago-related activities as opposed to only 8% participating in a part-time job in the private sector and 4.5% as self-employed in non-sago activities. It indicates that there is a high likelihood for the youths to be involved in a part-time job in sago-related activities notwithstanding their type of full-job employment. Lyu et al. (2022) suggest land use behaviour may be attributed to livelihood types of farming households, where he said types of farming households such as traditional farming agricultural farming households, agricultural-mainly part-time farming households, and agricultural-professional farming households show strong land dependence, which then affects their cultivated land use behaviours. This is an interesting observation as it shows dependence towards the sago sector among the youths despite the transformation of the occupation or industry they depend on. Delving further, the data shows that 70.6% of youths partaking in part-time jobs in the sago industry are those who are already self-employed full-time in the sago industry. It shows a tendency for those already employed full-time in the sago sector to continue to be involved in supplementary jobs in sago-related activities.

Interestingly, the data also shows a tendency among the youths to be involved in certain types of part-time jobs based on the nature of their full-time job. For example, youths working full-time in the public sector have a higher tendency (50%) to involve in the sago compared to those working in the private sector (17.3%). It may be due to the nature of the private sector’s working hours that dissuade them from taking up part-time jobs in the sago sector as the jobs are usually time and energy-consuming. Another exciting piece of information is that over half of the respondents, or about 105, claim they do not participate in any part-time jobs. Most of these 105 respondents (30 respondents or 28.58%) claim they are still in school, which explains their reluctance to work part-time. However, being in school is not entirely why these youths are reluctant to participate in the workforce. Half of the schooling youths take part-time in either sago-related jobs (44.6%) or non-sago-related jobs (1.8%). Even though the data shows a healthy inclination to work among youths in the area, the issue of unemployment among youths continues to be a matter of concern. A comparative analysis of the full-time and part-time employment patterns among these youth respondents indicated that about 33 or 16.5% of the overall 200 respondents surveyed are not in any way employed. It raises a fundamental question: Do these unemployed youths find the sago industry unappealing despite the multiple job opportunities in the industry? Thus, the remaining parts of this report explore issues regarding these youth respondents’ general attitudes towards the sago industry and factors that may influence their attitudes towards sago-based jobs.

Table 1. Youth part-time employment pattern (n=200)

		Working part-time			
		Self-employed (sago)	Private sector	Unemployed	Self-employed (non-sago)
Working full-time	Private sector	9 (17.3%)	16 (30.8%)	27(51.9%)	0 (0%)
	Public sector	5 (50%)	0 (0%)	5 (50%)	0 (0%)
	Self-employed (sago)	12 (70.6%)	0 (0%)	5 (29.4%)	0 (0%)
	Self-employed (non-sago)	7 (46.7%)	0 (0%)	5 (33.3%)	3 (20%)
	Schooling	25 (44.6%)	0 (0%)	30 (53.6%)	1 (1.8%)
	Unemployed	12 (24%)	0 (0%)	33 (66%)	5 (10%)
Total		70 (35%)	16 (8%)	105 (52.5%)	9 (4.5%)

Youths' attitudes toward Sago industry

The attitudes among youths toward the sago industry are crucial to understanding the industry's labour supply issue. As such, a construct of 12 items is examined to gauge youths' attitudes towards the sago industry. Mean scores derived from these 12 items are used to compare youth attitudes toward the sago industry. The data indicates a relatively high consensus that the youths have a positive attitude towards the sago industry. Figure 3 shows about 37 (18.5%) of them reported quite favourable, 139 (69.5%) favourable, and 24 (12.0%) highly favourable attitudes towards industry. These positive attitudes towards the industry are an unmistakable sign of this industry's promising future and survival.

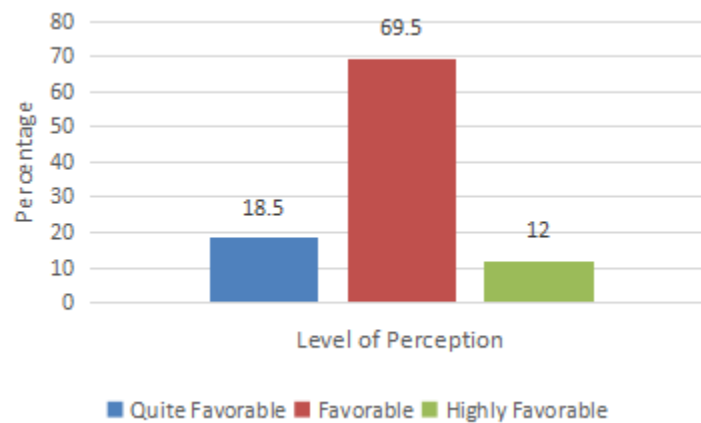


Figure 3. Youths' general attitudes toward Sago industry (n = 200)

Based on Table 2, youths admit that most of the work related to the sago industry is difficult for them to do because they view the industry as strenuous and challenging. This finding reinforces the general belief that agriculture is physically demanding (Amizi et al., 2016; Ishak et al., 2021). It is understandable as the nature of the industry's activities is mainly related to the upstream activities that demand physical strength and fitness from the individual. Despite their general view of the industry, they do not feel ashamed if people know that they come from families engaging in the sago industry (36.8% strongly disagree, and 30.8% disagree that they feel ashamed if others know that their family engage in the sago industry). They are optimistic that they can succeed in the industry. They believe the industry is suitable for everybody across educational attainment, provided they are willing to work hard.

Table 2. Youths' perception of the Sago industry by item (n = 200)

Item	Mean	S.D.	Strongly disagree 1	Disagree 2	Neither agree nor disagree 3	Agree 4	Strongly agree 5
1. Those involved in the sago industry are highly respected in our community	3.79	0.89	3 (1.5)	12 (6.0)	51 (25.4)	93 (46.3)	41 (20.4)
2. I feel ashamed if others know that my family is engaged in the sago	2.10	1.07	74 (36.8)	62 (30.8)	35 (17.4)	28 (13.9)	1 (0.5)

industry (R)							
3. The sago industry can be a major job of rural youth like me	3.49	0.87	1 (0.5)	22 (10.9)	80 (39.8)	72 (35.8)	25 (12.4)
4. The sago industry is not suitable for highly educated (R)	2.77	1.15	33 (16.4)	46 (22.9)	70 (34.8)	36 (17.9)	15 (7.5)
5. I'm ready to get information on the sago industry	3.79	0.89	3 (1.5)	6 (3.0)	68 (33.8)	77 (38.3)	46 (22.9)
6. Most of the work in the sago industry is difficult for me to do	3.00	1.01	15 (7.5)	43 (21.4)	84 (41.8)	44 (21.9)	14 (7.0)
7. Those involved in the sago industry do not influence our society (R)	2.85	0.84	7 (3.5)	64 (31.8)	84 (41.8)	42 (20.9)	3 (1.5)
8. I can succeed in the sago industry	3.49	0.73	2 (1.0)	11 (5.5)	85 (42.3)	91 (45.3)	11 (5.5)
9. Most jobs in the sago industry are boring	2.70	1.13	32 (15.9)	59 (29.4)	58 (28.9)	40 (19.9)	11 (5.5)
10. The sago industry is not a profitable venture for youth like me (R)	2.87	0.97	14 (7.0)	60 (29.9)	72 (35.8)	47 (23.4)	7 (3.5)
11. The sago industry is ideal for those who are willing to work hard	4.11	0.75	0 (0.0)	5 (2.5)	31 (15.4)	101 (50.2)	63 (31.3)

R = reverse-coded

The extent of youths' participation in the Sago industry

After exploring the employment patterns of these youth respondents, it is equally essential to disclose the degree of their involvement in the sago industry. This research explored the extent of youth participation in the sago industry. A few themes recur. First, types of activities (whether upstream or downstream) influence youths' participation in the sector. Results in Figure 4 shows that most of the youths (58%) are engaged in upstream activities, while the rest of them are engaged either in downstream activities (19%) or engaged in both upstream and downstream activities (23%). This observation corroborates the findings of Ishak et al. (2021) that more than half of the youth are involved in upstream sectors, indicating that most of the labour demand from the industry is predominantly concentrated on upstream activities. It also indicates less excess for the youths to participate in the downstream activities, forcing them to concentrate mainly on the upstream activities.

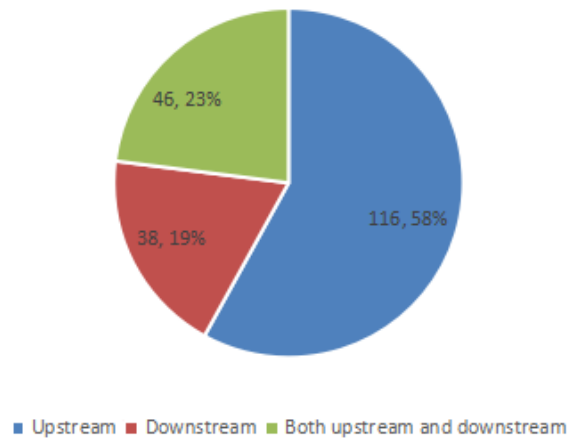


Figure 4. Youth participation in Sago industry by activity (n=200)

Further analysis of the engagement patterns of the youth respondents in the sago industry is outlined in Table 3. The analysis shows the pattern of time spent based on types of operations. Upstream operation includes planting, maintaining sago palms, gathering sago logs, and transporting them, while downstream operation involves sago processing, production of sago-based food products and sago products marketing. It is observed that 50% of the respondents spend an average of one to 10 hours per week in upstream and downstream sago cultivation activities.

Table 3. Youth respondents by hours of work per week (Upstream & Downstream)
 Percentages in parentheses

Number of work hours per week	Upstream n = 162	Downstream n = 82	Total n = 244
1 - 10	92 (56.8)	47 (57.3)	139 (57.0)
11 - 20	34 (21.0)	11 (13.4)	45 (18.4)
21 - 30	19 (11.7)	9 (11.0)	28 (11.5)
31 - 40	8 (4.9)	0 (0)	8 (3.3)
More than 40	17 (10.5)	18 (22.0)	35 (14.3)
Total	162	82	244

Although most youths spend almost an equal amount of time on both operations, weekly work hours spent for the operations are noticeably varied. For example, as indicated in Table 4, youths spend less time, around 16.32 hours on average, participating in upstream activities compared to 21.73 hours for downstream activities. Upstream activities such as planting, maintenance, harvesting, and transportation of sago logs are, although labour-intensive, the work hour is shorter compared to downstream activities, which may be the main reason why most youths prefer to participate in the upstream activities compared to downstream. Meanwhile, downstream activities such as sago processing and production of sago-based products are more time-consuming than physically demanding, which may be more appealing to certain youths.

Table 4. Mean hours of work per week based on operations

Operations	Mean	N	Std. deviation
Hours spent upstream	16.32	162	18.262
Hours spent downstream	21.73	82	26.072

Second, gender may also be an essential aspect affecting youths' industry participation. The extent of involvement of women and men in the sago industry varies depending on activities. From Table 5, young women are inclined to be involved in downstream operation activities, mostly involving tasks associated with producing sago-based products. The tasks are observed to be repetitive work that requires time and patience, as opposed to upstream operation activities that require muscle strength, such as planting, harvesting, and transporting sago logs. The dominant role of women in processing and sago-based food products was also proved by previous studies by Ahmad Ishak et al. (2017) and Taibi et al. (2018). This data suggests a degree of gender-typing of tasks, indicating their inherent understanding of their physical limitations and roles in the industry. In this sense, youths are viewed as having a clear understanding of the industry's needs.

Table 5. Involvement of youths in Sago-based activities

Operation	Activities	Male	Female
Upstream	Planting	27	16
	Planting and transporting	1	1
	Planting and felling	0	1
	Felling	42	17
	Felling and transporting	14	0
	Transporting	38	4
	Total		122
Downstream	Processing (sago flour)	5	9
	Production (food products)	0	28
	Selling	22	20
	Total		27

Third, age features saliently; the earliest age for youths participating in full-time employment related to the sago industry is 17 years old, while 16 years old for part-time. Both Table 4 and Table 5 shows that although many youths are employed full-time in the private sector (35.1%), they tend to take part-time jobs in sago-related activities. This occurrence happens across age categories where youths aged 17 and below are also observed to take up part-time jobs in the sago sector (48%). It is unsurprising as sago planting often relies on a family labour supply. It is common for household members to participate in the activities, especially when extra hands are needed for the more labour-extensive upstream activities.

Table 6. Full-time employment by age categories (Percentages in parentheses)

Age categories	Self-employed (sago)	Public sector	Private sector	Unemployed	Schooling	Self-employed (non-sago)	Total
17 and below	1 (1.9)	0 (0.0)	0 (0.0)	10 (19.2)	39 (75.0)	2 (3.8)	52 (100)
18 and above	16 (10.8)	10 (6.8)	52 (35.1)	40 (27.0)	17 (11.5)	13 (8.8)	148 (100)
Count	17	10	52	50	56	15	200

Table 7. Part-time employment by age categories (Percentages in parentheses)

Age categories	Self-employed (sago)	Private sector	Unemployed	Self-employed (non-sago)	Total
17 and below	25(48.1)	0 (0.0)	25 (48.1)	2 (3.8)	52 (100)
18 and above	45 (30.4)	16 (10.8)	80 (54.1)	7 (4.7)	148 (100)
Count	70	16	105	9	200

Four, education may affect youths' full-time participation in the industry though it may not deter them from participating as part-timers. Pearson's chi-square test was run to establish the relationship between youths' education levels and industry participation types. According to

the result of the study (Table 6), the chi-square test ($\chi^2 = 126.428^a$ and $P = 0.000$) indicates a positive and significant relationship at a probability level of 5% between education levels and the types of full-time participation in the industry. Meanwhile, the chi-square test ($\chi^2 = 18.401^a$ and $P = 0.624$) indicates no significant relationship between education levels and the types of part-time participation in the sago industry among the youths (Table 7). This indicates that youths with higher education levels are more likely to participate full-time in other industries than the sago industry, but that does not mean they would not participate in the industry as a part-timer.

Table 8. Chi-square test for youths' education levels and full-time employment

	Value	df	Asymptotic significance (2-sided)
Pearson chi-square	126.428 ^a	35	0.000
Likelihood ratio	118.830	35	0.000
Linear-by-linear association	4.992	1	0.025
N of valid cases	200		

a. 39 cells (81.3%) have expected count less than 5. The minimum expected count is .05

Table 9. Chi-square test for youths' education levels and part-time employment

	Value	df	Asymptotic significance (2-sided)
Pearson chi-square	18.401 ^a	21	0.624
Likelihood ratio	20.307	21	0.502
Linear-by-linear association	0.355	1	0.551
N of valid cases	200		

a. 22 cells (68.8%) have expected count less than 5. The minimum expected count is .05

Conclusion and recommendations

Agriculture is an important sector that plays a vital role in transforming the economies of developing countries. In the case of Sarawak, the sago industry posed a strategic role in stimulating economic development in the coastal area of Sarawak. The growth of the sago industry requires the engagement of manpower support in both upstream and downstream activities for the crop. Despite being confronted with unreliable labour supply in the form of full-time employment, this study shows a healthy employment trend among the youths in the sago industry. Evidence from this study shows that there is a positive inclination among the youth to participate in the industry. The sago industry is found to some extent to provide employment opportunities to the youths, be it full-time or part-time jobs. The most apparent is the youth's active participation in part-time jobs in the industry, where there is a tendency for the youths to join the sector as a part-timer despite still being in school or working full-time in the other sector. Most youths who participated in this study had a positive attitude towards the sago industry, which is an optimistic sign of the industry's promising future. A few themes have been identified regarding the degree of youths' involvement in the sago industry: 1) types of participation in the sector (whether upstream or downstream) may influence youths' participation in the industry; 2) the types of activities in the sector (upstream which involves tasks that requires muscle strength and downstream which involves tasks that requires time and repetitive job) may influence gender-typing of tasks; 3) the need for family labour supply compelled younger youths to participate in the industry early; 4) education attainment on some degree may affect youths

participation in the industry but not their participation as part-timers. All the themes presented suggest challenges the youths faced regarding extending their participation in the industry. This study suggests that some recommendations can be implemented to ensure the continued involvement of the youths in the industry. The recommendation would be to understand the limitations that are faced by the youths that limit their involvement in the industry. Hence, there is a need to reach out to the youth through concentrated extension education programs that aim directly toward their specific tasks to increase crop and product production.

Acknowledgement

The authors would like to thank the Ministry of Higher Education Malaysia for the Fundamental Research Grant Scheme (FRGS) FRGS/1/2020/SS0/UNIMAS/02/4 and Universiti Malaysia Sarawak (UNIMAS). The authors would also like to thank the Melanau community for their cooperation and assistance in the research.

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