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A Typology of Young Cocoa Farmers: Attitudes, Motivations and Aspirations

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Abstract

This paper presents a typology to highlight and describe the variation in attitudes among young farmers in rural Ghana, a group that has been treated in policy discourses and in development practice as largely homogenous. It further identifies motivations and aspirations associated with each type. A cluster analysis of survey data from 120 respondents yielded two types of young farmers: ‘positive’ and ‘resigned’. The likelihood of being in either category was found to be related to marital status, location, and whether one had a secondary occupation. Further, the ‘positive’ group was more likely to report being influenced by adult role models and more likely to aspire to stay in farming. Our findings underscore the relevance of socio-economic and ecological environment on young people’s attitudes to and decisions regarding farming and, consequently, on the outcome of policy and programmatic interventions meant to increase their participation in agriculture.

Keywords Rural development · Agriculture · Youth · Youth employment · Farmer typology · Ghana

Résumé

Cet article présente une typologie qui vise à mettre en évidence et à décrire les variations en termes d’attitudes chez les jeunes agriculteurs dans les zones rurales du Ghana, qui ont été considérés—dans les discours politiques comme dans la pratique des programmes de développement—comme un groupe globalement homogène. En outre, l’article identifie les motivations et les aspirations associées à chaque type. Une analyse par grappes des données d’enquête auprès de 120 participants a révélé deux types de jeunes agriculteurs: les « positifs » et les « résignés ». La probabilité d’appartenir à l’une ou l’autre de ces catégories était liée à l’état matrimonial, à l’emplacement et à l’activité secondaire. De plus, le groupe des « positifs » était plus

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susceptible de déclarer être influencé par un adulte jouant le rôle de modèle et plus susceptible également de vouloir rester dans l'agriculture. Nos résultats soulignent la pertinence de l'environnement socio-économique et écologique sur les attitudes et les décisions des jeunes concernant l'agriculture et, par conséquent, sur les résultats des interventions politiques et programmatiques destinées à accroître leur participation à l'agriculture.

JEL classification Q190 · R00 · J430 · J460

Introduction

The nexus between young people and agriculture in Africa has, in the past decade, become the focus of significant policy and programmatic attention (Anyidoho et al. 2012a; FAO/CTA/IFAD 2014; World Cocoa Foundation 2016; Schwebel et al. 2019). A renewed interest in agriculture as the 'engine of growth' for Africa's development is built on a narrative of young people as the saviours of agriculture who will transform the sector by the infusion of their skills, energies, and innovation (AGRA 2015; Collier and Dercon 2009; Sumberg et al. 2012, 2014). In turn, young people are expected to benefit from this policy shift to the extent that their participation in agriculture helps address the challenge of youth unemployment (Brooks et al. 2012; FAO 2014; Filmer et al. 2014; Mueller and Thurlow 2019).

The picture of a revitalized and sustainable agricultural sector energized by educated, entrepreneurial, and technology-embracing young people runs counter to another conventional wisdom in African policymaking—which is that young people are abandoning farming in rural areas (Anyidoho et al. 2012b). This latter narrative finds some support in studies that suggest that young people are unenthusiastic about farming, either as a result of lack of access to land and other resources to make a success of a livelihood in agriculture or as the consequence of education, urbanization, and other social changes that alter their work and general life aspirations (Bezu and Holden 2014; Leavy and Hossain 2014; Porter et al. 2010; White 2012). However, a review of the literature does not yield conclusive evidence that young people are exiting agriculture in greater numbers than before (Asciutti et al. 2016). Even if this was true, the increasing population of young people and the fundamentally agrarian nature of African economies mean that there is now and will be a significant number of young people whose livelihoods involve rural agriculture (Abay et al. 2020; Filmer et al. 2014; IFAD 2019; Yeboah and Jayne 2020; Yeboah et al. 2020), often in combination with other income-generating activities (Carreras et al. 2020; Sumberg 2021).

Given the numbers of young people who engage in rural farming at some point in their lives, it is important to heed White's (2012) call for a course correction from the preoccupation with the exit of young people from the agricultural sector towards research that seeks to understand the motivations and aspirations of the young people who are *already* in agriculture. This is precisely the task this paper undertakes. In doing this, we respond to White's (2012) further encouragement to recognize heterogeneity in the sub-group of rural youth who participate in on-farm production.



Diversity among young people has not been sufficiently researched and recognition of differences in the specific category of ‘rural youth’ is even more uncommon (Asciutti et al. 2016). We subscribe to Asciutti et al.’s (2016) argument that, ‘in relation to both the research evidence and development initiatives, it is important to keep two questions in mind: which young people? And which rural areas?’ (p. 12). Following on this, the premise of the paper is that economic, social and physical locations matter in the attitudes about farming formed by young people in rural areas (Sumberg 2012).

This study develops a typology to show the variation in attitudes among young farmers in rural Ghana. Typologies have long been used to understand the behaviours of farmers, often with the objective of predicting, controlling or explaining the impact of policies and other interventions (Daloğlu et al. 2014; Guillem et al. 2012). Typologies may be used to describe farmer motivations (Schwarz et al. 2009) and attitudes (FAO 2014) and to establish a relationship between motivations, attitudes, and other characteristics, such as socio-economic circumstances (Kostrowicki 1977; Valbuena et al. 2008). In this paper, we argue that differences in the personal background and physical location of young farmers in cocoa-growing areas in Ghana correspond to differences in their *attitudes* towards cocoa farming, resulting in a typology of young farmers. We further expect a relationship between the typology of farmers and *motivations* for farming in the present and *aspirations* to stay in farming in the future.

Young People and Ghana’s Cocoa Sector

The context of our study is cocoa production in Ghana, the country’s most important agricultural sub-sector. For the past century, cocoa production has contributed to economic growth and a reduction in poverty, hence the concern that the sector be sustained (Amanor 2010; Barrientos et al. 2007). This concern is fuelled by the conventional narrative of an aged and ageing cocoa farming population. However, Yeboah and Jayne (2020) demonstrate with nationally representative survey data from six African countries, including Ghana, that the average age of Africa’s farming population is between 32 and 39 years and has largely remained unchanged in the past two decades. With specific reference to Ghana’s cocoa sector, here again, the evidence from literature indicates that the average age of cocoa farmers has remained fairly constant, suggesting that this population is not, in fact, ‘ageing’ (Fig. 1). Nonetheless, the average age of cocoa farmers is relatively advanced 50 (Fig. 1), and this appears to legitimate concern about the sustainability of the cocoa industry in Ghana and, consequently, fuels the effort to encourage greater participation of young people in cocoa production (Anyidoho et al. 2012b). The literature also suggests that older farmers are risk averse and less likely to adopt productive agricultural practices that increase productivity (Anim-Kwapong and Frimpong 2005; Baffoe-Asare et al. 2013). Conversely, younger farmers who have positive attitudes towards cocoa farming have been found to be more innovative and inclined to adopt good agricultural practices (e.g. Zhang et al. 2012; Adesina et al. 2000). There is, however, a need for caution against undue optimism about the potential for



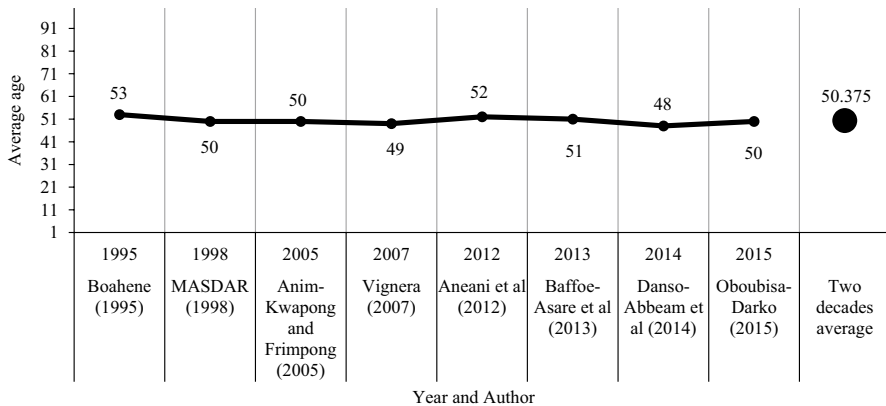


Fig. 1 Average age of cocoa farmers over the years based on previous research

innovation and creativity among young people, as such behaviours are influenced by contextual factors (Mueller and Thurlow 2019; Sumberg and Hunt 2019; Sumberg et al. 2019).

The government of Ghana, donor agencies and civil society organizations have invested in young people's involvement in cocoa farming with the objective of increasing national production and securing the future of the Ghanaian cocoa industry. An important intermediate objective of such programmes is to persuade young people to perceive agriculture (and specifically farming) as a viable livelihood (Sumberg et al. 2017). In 2014, the government, through the Ghana Cocoa Board, introduced a Youth in Cocoa Farming Initiative as part of an agenda to promote youth involvement in cocoa farming. In 2016, a consortium of organizations started a US \$74 million, 5-year programme to have 800,000 young people enter into cocoa farming as a business. Similarly, the goal of the Cocoa Action strategy led by the World Cocoa Foundation (WCF) is to nurture a next generation of farmers that will take on cocoa as a viable work and business opportunity (World Cocoa Foundation 2016).

Diversity Among Young Farmers

A significant limitation of youth-targeted interventions is the neglect of differences among young people (Sumberg et al. 2014; Yeboah and Flynn 2021). To begin, research on 'youth' often place young men at the centre, conceptually and as subjects of research (George 2014; Waller 2006). In research on Ghana's cocoa sector, women's relative invisibility is compounded by the fact that commercial production of cocoa has been historically dominated by men in terms of landholding, as well as access to and control of crucial inputs (such as labour and capital) and of monetary rewards (Allman 1996; Amanor 2010; Barrientos 2013; Kotey and Tsikata 1998; Vigneri and Holmes 2009). Age is another important variable of interest. The wide age range (15 to 35 years) that is used officially to delineate youthhood in Ghana



(see Government of Ghana 2010) encompasses a number of important life phases, including schooling, the transition from school to work, and the establishment of independent work and family lives. Thus, a more differentiated view of ‘the youth’ will take into account age difference. Further, education, family and other social relationships are forms of social capital that influence the opportunities young people perceive and are able to take advantage of in their environments (IFAD 2019; Sumberg et al. 2019; Yeboah et al. 2020). In sum, gender, age, education, social relations, and the norms and expectations associated with these markers of social experience and difference influence young people’s perception and experience of opportunity in farming (Crossouard et. al. 2021; Sumberg et al. 2019; Sumberg 2021). In addition, the ‘landscape of opportunity’ available to young people is also shaped by geographic locations and variation in natural resources, lands, infrastructure and markets (IFAD 2019; Sumberg 2012; Sumberg et al. 2019). In this sense, the viability and desirability of farming as an occupation is a function of physical location (Dyer 2013; Sumberg and Okali 2013; Sumberg et al. 2019). In this study, therefore, we investigate the relationship between individual differences in sex, age, education, marital status, social networks, and location, on the one hand, and young people’s outlook on cocoa farming on the other.

In examining influences on young people’s configuration of farming in their lives, the study does not focus on material forms of capital such as land and finance, which have been convincingly shown to be important (Akatiga and White 2015; Dyer 2013; Leavy and Hossain 2014). Rather, it considers less frequently explored attributes of attitude, motivation, and aspiration which are shaped but not determined by material resources. Specifically, it considers differences in attitudes associated with young farmer’s social and material environments, and the relationship between these attitudes (which are the basis of farmer typologies) and young farmers’ current motivations for farming and their future aspirations regarding farming.

An attitude is an inclination to respond negatively or positively to a person, an object, or an event (Fishbein and Ajzen 1975; Mills et al. 2013). Farmers’ experiences, including their interactions within their social context, are an important basis of their outlook on farming. We conceive of aspirations as desired futures (Huijsmans et al. 2020) which, like attitudes, are shaped by life experiences, social interaction, exposure to media, among other influences and, therefore, respond to changes in experiences, information, and environment (Dilley et al. 2021; Leavy and Hossain 2014; Leavy and Smith 2010). Importantly, young people’s aspirations are also influenced by their interpretation of what is achievable in their ‘opportunity space’, which is the ‘spatial and temporal distribution of the universe of more or less viable options that a young person may exploit as she/he attempts to establish an independent life’ and which is a function of ‘global, national and regional factors including institutions, policy and demand; place; and social and cultural norms’ (Sumberg et al. 2012, p. 5; also Sumberg et al. 2019). Finally, our notion of motivation refers to factors in the social environment that encourage a positive perspective on farming. In particular, we focus on the presence of older farmers in the young person’s social vicinity as sources of motivation, based on Leavy and Hossain’s (2014) study that reported that young people in 23 communities across three continents (including Africa)



expressed a need for successful role models in farming to motivate them to go into or stay in farming (see also Afere et al. 2019).

Methods

Research Sites

A community each was selected in three cocoa-growing regions in Ghana: Ashanti, Brong Ahafo, and Western. Cocoa growing in Ghana originated in the Eastern Region and moved into Ashanti, making these two regions the earliest sites of cocoa production. The cultivation of the commercial crop then moved to Brong Ahafo and Volta Regions. The Western Region is considered the last frontier of cocoa development (Barrientos et al. 2007). Thus, the three sites—Abroma in the Ashanti Region, Asumura in the Brong Ahafo Region, and Wassa Japa in the Western Region—represent the temporal progression of cocoa across Ghana.

The sites also present variation in terms of their sizes, road accessibility, and range of livelihood opportunities for the youth. Abroma is in the Afigya Kwabre District of Ashanti Region, and about 3 h from Kumasi, the second largest city in Ghana. It has a population of mostly indigenes but also migrants who work as farm labourers or caretakers. Cocoa farming is the main source of work and income for the young people. Others are in trades such as food vending, dress-making, hairdressing, carpentry, and masonry, while still others have migrated to bigger towns and cities for school, apprenticeship or work. For young people who would like to own or expand farms, access to land is reportedly more of a challenge than before, since residential development is slowly absorbing farmlands, pushing cocoa farming further away from the town centre.

Wassa Japa in Western Region is a bigger cocoa-growing town that has seen the emergence of small-scale surface mining for gold (commonly called *galamsey*) as a major economic activity. According to conversations with young people in the town, gold mining was appealing because it yielded faster and greater income than cocoa farming. Attracted by the lure of quick money, youth from other districts and regions have migrated to mine gold. Others have taken up the income-earning opportunities that have subsequently opened up: they retail mobile phone top-up vouchers, offer mobile money services, repair phones, sell lottery cards, buy and sell gold, drive taxies, sell food and small provisions, and more. Land for cocoa farming in Wassa Japa has decreased substantially because of the sale of farmlands to gold miners.

Asumura, a farming village in the Asunafo North Municipality of Brong Ahafo Region, also has young migrants but with an interest in cocoa farming. Asumura is more cut off than the other two towns because of the poor roads and mobile phone networks. It abuts one of the biggest forest reserves in the country, thus limiting the expansion of cocoa farming.



Target Population

The population of interest was young people who farmed cocoa. A young person for the purposes of this study was an individual aged between 15 and 35 years—the age definition of ‘youth’ adopted by both the government of Ghana (Government of Ghana 2010).¹ Our operational definition of young farmers was of individuals within the specified age group who self-reported as engaging in cocoa farming. Consequently, our sample included owner-growers, growers working on family land, sharecroppers, and caretakers (see Table 1), subsuming young people who engaged to different extents in cocoa farming, who had different degrees of control over the land on which they farmed and varying ability to make independent decisions regarding their work. The definition of young farmer was made purposefully wide in recognition of the fact that young people participate in various forms of farming simultaneously and over time, and often in complement with non-farm work (Berckmoes and White 2014; Okali and Sumberg 2012; Yeboah and Jayne 2020; Yeboah and Flynn 2021) and, further, young people’s envisioned *future* engagement with farming similarly includes combinations of farm and non-farm activities (Anyidoho et al. 2012b; Dilley et al. 2021; LaRue et al. 2021).

Sampling Design and Sample Composition

The three communities (Abroma, Wassa Japa, and Asumura) were chosen to represent different sizes of cocoa-growing towns and to present variation in economic activities. In each research site, an attempt was made to develop a list of farmers from which a sample could be drawn. In Abroma, a consolidated list was created from names obtained from licence-buying companies in the small town and from the Agricultural Extension Agent under the Ministry of Food and Agriculture. The final list contained 244 names verified by four resident farmers. In Wassa Japa, the Cocoa Health and Extension Division of Ghana Cocoa Board provided a list of 596 farmers. In Asumura, a list of 281 farmers was obtained from field staff of Kuapa Kokoo (a cooperative and licenced cocoa-buying company that also offers extension services to farmers) and from the local cocoa farmers’ association. However, few of the farmers on the list fitted the study’s operational definition of a young cocoa farmer (someone from the ages of 15

¹ The 15–35 age range encompasses individuals at different life phases and, for that reason, is somewhat limited as an analytical category. However, given the reference in this paper to the youth-agricultural nexus as an important policy issue on the African continent, and the hope that the paper can potentially contribute to evidence-based policymaking, we use this age range which has been adopted by the African Union. It is arguably more contextually relevant than the 15–24 year range used by the World Bank and United Nations agencies, for instance, because it appears to acknowledge the social and economic constraints that may delay young people in their achievement of independent adulthood (see Honwana 2012 and Mueller and Thurlow 2019). Practically, for our study, the 15–35 range allows us to include more young people who have established farming as an occupation, as the literature shows that more intensive (including full-time) engagement in farming occurs at older ages (Yeboah and Jayne 2020).



Table 1 Characteristics of the sampled young farmers ($n = 120$)

Features	Categories	Percentage
Sex	Male	66.7
	Female	33.3
Age (years)	Mean = 27 (Std. error = 0.536), Min. = 15, Max. = 35	
Years of cocoa farming experience	Mean = 9 (Std. error = 0.532), Min. = 1, Max. = 27	
Marital status	Married	56.7
	Unmarried	43.3
Educational status	No education	13.3
	Basic education	69.2
	Secondary education	15.8
	Post-secondary/tertiary education	1.7
Main source of income	Cocoa	54.2
	Craftsmanship/artisan	11.7
	Small-scale mining	9.2
	Trading/vending	11.7
	Other (Teaching, Lottery agent, Housewife, Religious leader, Livestock farming)	13.3
Secondary occupation	Yes	56.7
	No	43.3
Migration status	Native	62.5
	Settler	37.5
Residence	Abroma	33.3
	Asumura	33.3
	Wasa Japa	33.3
Main form of engagement with farming	Owner-grower	70.0
	Caretaker	14.0
	Sharecropper	2.0
	Grower but works on family farm	14.0

to 35), since the list was not exhaustive of all cocoa farmers within these communities. Therefore, older farmers (who had been randomly sampled for another aspect of the broader research project of which this study is a part) were asked to identify young cocoa farmers in their household. Consequently, 40 young cocoa farmers were purposefully selected in each town. In all, 47% of the total number of young farmers were obtained from the list developed and 53% were identified through older farmers on the list. The resulting sample is, therefore, non-random



sample but contains a diverse group of respondents that allow comparisons for sub-groups of young farmers (Table 1).

Research Instruments and Data Collection

A survey research method, using a questionnaire as a research instrument, was employed. The questionnaire was uploaded in the Mobenzi Researcher® console, a mobile data-collection tool. Two field researchers conducted interviews and recorded answers on the Mobenzi device that was then synced to a data centre. The face-to-face interviews were conducted in June 2016 in the most commonly spoken Ghanaian language in the area (Twi) and the responses simultaneously translated and entered into the mobile devices.

In developing a typology of young farmers, we adapted an approach first used in a project called Farmer Voice (TNS, 2012). The study employed five of seven statements that aimed at categorizing farmers into categories to predict their likelihood of using specific services that would potentially enhance their work. The five statements adapted from the TNS (2012) are presented below.

I am proud to be a cocoa farmer.

It is my destiny to be a cocoa farmer.

There is no better investment than cocoa farming.

If I had a choice, I would not be a full-time cocoa farmer.

There is no hope for cocoa farmers like me to improve.

The five statements were presented to respondents to indicate, on a three-point Likert scale, whether they agreed with, were neutral about, or disagreed.² Average responses to these statements were used to generate two attitude dispositions of the young cocoa farmers towards their occupation.

Data Analysis

Common means of analysis for generating farmer typologies are factor analysis (FA), multi-correspondence analysis (MCA), and principal component analysis (PCA) with cluster analysis (CA) (Weltin et al. 2017; Daxini et al. 2019; Lopez-Ridaura et al. 2018). The FA, MCA or PCA is initially used to reduce selected variables into a smaller number of distinct non-correlated components. These reduction methods are suitable when the data have multiple variables, with multiple observations per variable, which are highly correlated (Kherif and Latypova 2020). The aim is to find a set of condensed factors that characterize the original data (ibid.).

In this study, we used CA without first applying any of the variable dimension reduction techniques due to three reasons. First, the five variables were not highly

² Though scales with higher points can provide more information about respondents' subjective evaluation, for our type of study, we agree with Jacoby and Mattel (1971) that both reliability and validity of response outcomes are fairly independent of the number of response choices.



Table 2 Correlation matrix of selected variables

Variables ^a	A	B	C	D	E
A	1	0.561	0.49	-0.42	-0.115
B		1	0.462	-0.366	-0.066
C			1	-0.473	-0.194
D				1	-0.013
E					1

^aVariables A–E represent five statements as indicated earlier

Table 3 Eigenvalues and percentage variance explained by principal components resulting from PCA

Principal component	Eigenvalues	% of Variance	Cumulative %
1	2.414	48.285	48.285
2	1.016	20.324	68.609
3	0.67	13.399	82.009
4	0.471	9.422	91.431
5	0.428	8.569	100

correlated (Table 2). Second, an initial PCA of the five variables provided five principal components (PCs) (Table 3). Finally, the criteria for selecting PCs are that each PC explains at least 5% of the variance and that the cumulative percentage of variance for selected PCs is at least 75% (Jolliffe and Morgan 1992). For our study, each of the five PCs obtained explained at least 8% of the variance (Table 3). In addition, using Kaiser's rule (Kaiser 1960), the cumulative percentage of variance explained by PCs with eigenvalues greater than one was about 68.6%, which would lead to about 31% loss of information (Table 3). Thus, there was no need to apply any of the dimension reduction techniques.

Due to the exploratory nature of this study, we used a straightforward two-step approach of cluster analysis to obtain the typology constructs. Similar to Goswami et al. (2014), we first used a hierarchical procedure based on Ward's method with squared Euclidean distance to access the number of clusters within the data. Ward's method minimizes within-cluster variation by comparing two clusters using the sum of squares between the two clusters, summed over all variables (Aravindakshan et al. 2020). The number of clusters was decided using the elbow rule from the coefficients at each stage in the agglomeration schedule (Table 4). According to this rule, it is ideal to stop the clustering process when there is a large difference between the coefficients of two consecutive stages (Gelasakis et al. 2012; Yim and Ramdeen 2015). In Table 4, there is a jump in the coefficient values between stages 115 and 116 with a difference of approximately 156. This was a noticeable increase as we moved down the list of coefficients in the agglomeration schedule. Hence, we stopped the clustering after stage 115. Afterwards, the stage at which we stopped the cluster is subtracted from the number of observations ($n=117$ since 3 persons out of 120 failed to respond to the 5 statements). This resulted in two clusters (i.e.



Table 4 Agglomeration schedule for the hierarchical cluster analysis

Stage	Cluster combined		Coefficients
	Cluster 1	Cluster 2	
110	245	248	113.701
111	275	281	130.398
112	246	287	151.571
113	245	272	183.32
114	244	275	215.273
115	244	245	271.13
116	244	246	426.735

Clustering was stopped at stage 115 (bolded) due to a sharp rise in the coefficient

117–115) which was successively used in a k-means cluster analysis to assign clusters to respondents (Bidogezza et al. 2009; Goswami et al. 2014). The responses that significantly contributed to the clusters derived were further assessed using a Kruskal–Wallis test (ibid.). The median response to each of the five statements enabled the description of each cluster in terms of the two attitudes.

Further, chi-square tests were employed to identify personal attributes (such as, sex, marital status, education, migration status, secondary occupation, and community of residence) that are related to attitudes. Chi-square tests were also used to analyse the extent to which attitudes were linked to motivations and aspirations. Variables used to operationalize motivation included social interactions, experiences, and information, including, family ownership of a cocoa farm, family member’s involvement in cocoa farming and their knowledge of successful cocoa farmers. The aspirations variables considered included whether the young farmers desired to make cocoa farming a lifetime occupation and whether they preferred to live in rural or urban areas.

Results and Discussion

Young Farmer Attitudes Types

Two attitude typologies were derived from the five statements adapted from Farmer Voice study previously described (TNS 2012). The typologies represented two groups of young farmers: those we described ‘positive’ about farming (68%) and ‘resigned’ (32%) (Table 5). Except for the statement, there is no hope for cocoa farmers like me, all other statements considered in the cluster analysis significantly contributed to the derived typologies (Table 5).

The ‘positive’ young cocoa farmers reported being proud of their farming occupation, thinking of it as their destiny, a choice, and a good investment. In contrast, the young farmers who were resigned to cocoa farming did not believe it was their destiny, and perceived that there were better investment and occupations than cocoa



Table 5 Attitude typology based on cluster median responses to statements and Kruskal–Wallis One-way Anova test for significance of attributes

Statements	Median responses		Kruskal–Wallis test statistics	
	Cluster 1 (<i>n</i> =34)	Cluster 2 (<i>n</i> =62)	Test Statistic	Significance (<i>p</i>)
	<i>Cluster names</i>			
	Resigned	Positive		
I am proud to be a cocoa farmer	Neutral	Strongly agree	57.152	0.000
It is my destiny to be a cocoa farmer	Strongly disagree	Strongly agree	68.746	0.000
There is no better investment than cocoa farming	Strongly disagree	Strongly agree	49.669	0.000
If I had a choice, I would not be a full-time cocoa farmer	Strongly agree	Strongly disagree	44.314	0.000
There is no hope for cocoa farmers like me	Strongly disagree	Strongly disagree	1.760	0.185



Table 6 Relationship between attitudes and demographic variables

Demographic variable	χ^2 (df)	Significance (p)
Sex	1.604 (1)	0.205
Marital status	12.161 (1)	0.000**
Education status	0.376 (1)	0.540
Migrant status	0.334 (1)	0.563
Residence (location)	23.569 (2)	0.000**
Secondary occupation	9.145 (1)	0.002*

Df degree of freedom

*, ** $p \leq 0.05$ and $p \leq 0.01$, respectively

farming. Overall, the resigned group expressed unhappiness with their current circumstances but, like the positive young farmers, they still evinced a hope for the future (that is, they strongly disagreed that there was no hope for them as farmers).

Relationship Between Respondent Characteristics and Attitudes

A number of characteristics were analysed for their relationship with the two farmer types. The analysis indicates a statistically significant relationship between attitudes and some demographic variables of the respondents: marital status, place of residence, and range of occupations (Table 6).

Before we discuss the factors that appear to be associated with attitudes to cocoa farming, it is important to address the counterintuitive finding that there was not a statistically significant relationship between attitudes, on the one hand, and sex, education, and migrant status as independent variables (Table 6). The relatively limited research on young people in rural, agriculture points to their diverse and nuanced relationship with farming (Anyidoho et al. 2012b; Sumberg et al. 2012; Berckmoes and White 2014; Sumberg 2021). There is not as yet a reasonably large body of work that yields a consensus on the factors associated with the attitudes of young farmers. Moreover, our sample is made up of young people who have already made the decision to take up farming—recognizing, as earlier stated, that these decisions will be shaped, and even constrained, by social, material, and other contextual factors. It should not be presumed that the differences that differentiate young farmers from non-farmers (which is what the existing literature focuses on) are the same differences *among* rural young farmers.

We turn now to the three factors that distinguished the two groups of young people in terms of attitudes to farming: marital status, location, and possession of a secondary occupation (see Table 4). First, unmarried young farmers were more likely to feel resigned to cocoa farming, whereas their married counterparts were more likely to have a positive attitude to farming (see Fig. 2). One explanation may be the differences in ages across the two farmer groups (Table 7). With an average age of 25, the resigned young cocoa farmers were significantly younger than their ‘positive’ counterparts. In addition, the married farmers had significantly more years of farming experience than the unmarried and generally young farmers (Table 7). We



Fig. 2 Relationship between young cocoa farmers' attitudes and marital status

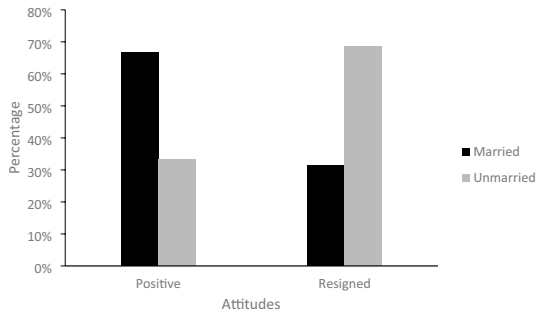


Table 7 Effect of age and cocoa farming experience on young farmer typology and marriage

Young farmer attitude	Average age in years ^a	Average cocoa farming experience in years
Positive	28.4 (0.6)	9.4 (0.8)
Resigned	24.5 (1.0)	7.7 (0.9)
<i>Test statistics</i>	$t(df) = 3.578 (115), p = 0.001$	$t(df) = 1.185 (115), p = 0.238$
<i>Marital status</i>		
Married	30.3 (0.5)	10.7 (0.8)
Unmarried	23.2 (0.8)	6.6 (0.6)
<i>Test statistics</i>	$t(df) = 7.779 (86), p = 0.000$	$t(df) = 4.201 (109), p = 0.000$

df denotes degree of freedom

^aFigures in parenthesis after averages are standard errors

can interpret these results in two ways. It could be that older youth who were married may have experienced a 'foreclosure' of options for work and were therefore more inclined to be content with cocoa farming (see Huijsmans et al. 2021). Another explanation for the more positive attitude among married youth in our study is the access that marriage can provide to land and labour for cocoa production (Lambrecht 2016; Higgins and Frenrich 2011; Duncan 2010). A married person may have easier access to farmland through an expanded family network, and wives may receive lands from their husbands as gifts or rewards for the labour support they provide on the farm (Duncan 2010). In addition, wives and older children or youth are a crucial source of labour for cocoa production (Amanor 2010; Allman and Tashjian 2000).

Location was significantly associated with the attitudes of young farmers towards their occupation (see Table 6). In Abroma where the majority of youth were engaged in cocoa farming, the young cocoa farmers with positive attitudes were almost twice as many as those with resigned attitudes (Fig. 3). They expressed personal satisfaction in their engagement in farming and were hopeful about their future. Many of the young cocoa farmers in Wassaja a town where small-scale surface mining had opened up ancillary employment and trading opportunities, also had positive attitudes to cocoa farming. Conversely, in Asumura, the majority of young farmers in our sample felt resigned to cocoa farming, the town's main economic activity.



Fig. 3 Relationship between attitudes and location

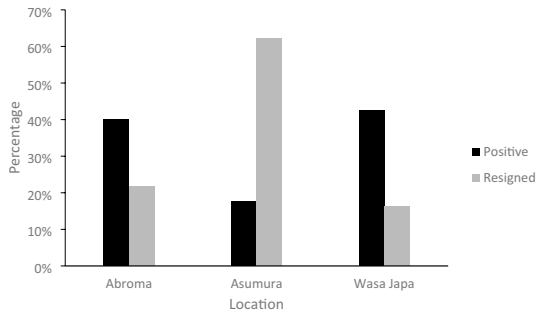
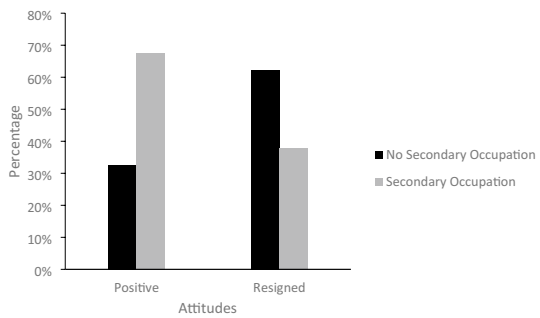


Fig. 4 Relationship between young cocoa farmers' attitudes and secondary occupation



The low numbers of resigned young farmers in Abroma and Wasa Japa compared to Asumura could be explained in part by the relative lack of economic opportunities for young people in Asumura. Abroma is very close to the second largest city, Kumasi, and the young people could relocate for alternative livelihoods. In Wasa Japa, young people could find non-farm work in the artisanal and small-scale gold mining activities that thrive in the town. By contrast, young farmers in Asumura faced a more limited range of livelihoods activities and may, therefore, have found themselves in cocoa farming by default.

Another possible explanation for the distribution of farmer types across the three towns is the difference in the depth and range of economic activity. In Abroma and Wasa Japa, non-farming activities fed into the cocoa farming as an economic activity. In other words, a more vibrant local economy in Abroma and Wasa Japa may vitalize cocoa production as a form of livelihood. Both of these interpretations are supported by further analysis that indicated a relationship between the young farmers' attitudes and their alternative economic activities; young farmers who had secondary occupations were less likely to feel resigned in cocoa farming (Fig. 4).

Attitudes and Motivations

As previously discussed, attitudes are derived from many sources, including social interaction. We tested the relationship between young people's attitudes and their familiarity with other, mainly adult, farmers. Our findings indicate that youth who



Fig. 5 Relationship between attitudes and knowledge of a successful cocoa farmer

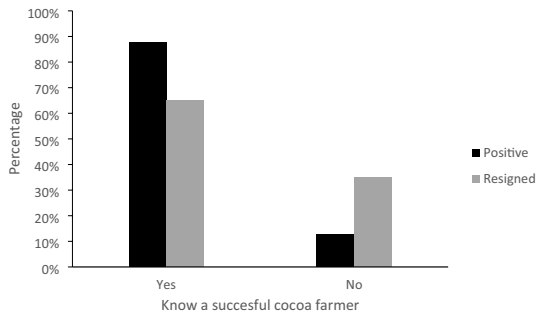


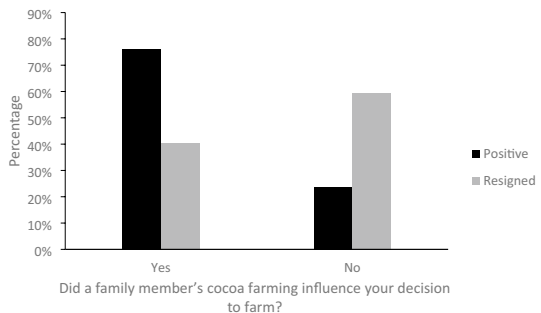
Table 8 Relationship between attitudes and motivation variables

Motivation variable	χ^2 (df)	Significance (<i>p</i>)
Family ownership of cocoa farm	0.086 (1)	0.770
Work in family farm	0.637 (1)	0.425
Partake in family farm decision making	0.947 (1)	0.331
Know a successful cocoa farmer	8.207 (1)	0.004**
Yes, a family member's cocoa farming influenced decision to be a cocoa farmer	14.173 (1)	0.000***
Yes, knowledge of a successful cocoa farmer influenced decision to be a cocoa farmer	21.013 (1)	0.000***

Df degree of freedom

** , *** $p \leq 0.01$ and $p \leq 0.001$, respectively

Fig. 6 Relationship between attitudes and influence of family member's cocoa farming

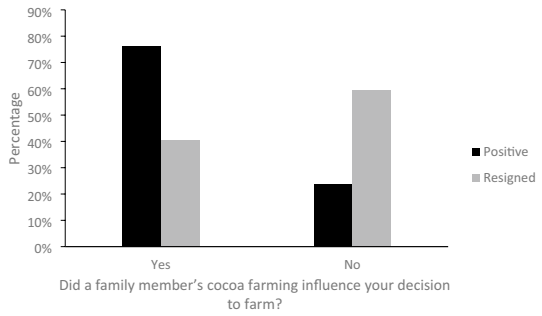


knew successful cocoa farmers were more likely to have positive attitudes towards their occupation (Fig. 5; Table 8).

The questionnaire also elicited responses from the respondents about the motivation they derived from their social relations. The analysis showed that young farmers who had a more affirmative attitudes to their occupation reported being influenced by family members and other successful cocoa farmers (Table 8; Figs. 6, 7). Notice that the mere existence of a family farm and the experience of work on a family farm did not have the same correlation with attitudes. Overall, these findings suggest that



Fig. 7 Relationship between attitudes and influence of a successful cocoa farmer



it is not the present reality of farming but rather the prospects provided by older, successful farmer role models that inspire young people.

Analysis of responses to the open-ended question, ‘What makes a farmer successful?’ provides more insight into the characteristics of these role models that serves as motivation for young people. The responses indicated that the young farmers define success largely by material wealth. However, it was not simply about having a large income but what one did with one’s money. The most frequently referenced sign of success (about 60% of responses) was the possession of a house, in addition to other forms of property such as cars and farmland. Farmers who used their wealth from cocoa to set up other businesses were also admired because they had used farming to ‘step up’ other livelihoods and businesses. Finally, farmers’ ability to invest in their children’s education was also frequently mentioned.

These definitions of success are reflected in the following illustrative quotes (summaries in English of longer answers in Twi), which give the overall picture of success as the ability to make investments (in land, house, economic opportunity, education) that elevate the family and bring more security to future generations:

They have been able to educate their children with cocoa money, build houses with cocoa money, and even rent houses for their children outside this town.

He has a lot of farms and has been able to establish a lot of businesses from cocoa farming.

Even if there is no food [in the town], in the house of this person there is always food. They educate their children and invest in trading.

Attitudes and Aspirations

Analysis was conducted to examine the relationship between young farmers’ attitudes to cocoa farming and some indicators of their aspiration (Fig. 8). Table 9 shows that only the aspiration to remain in cocoa farming throughout their lifetime was significantly associated with young cocoa farmers’ attitudes. Two other factors that may indicate a desire to migrate—whether young cocoa farmers aspired to live near or far from their families and whether they aspired to live in urban or rural areas—was not significantly related to the young farmers attitudes to cocoa farming.



Fig. 8 Association between attitudes and young farmers' aspiration to make cocoa farming their lifetime occupation

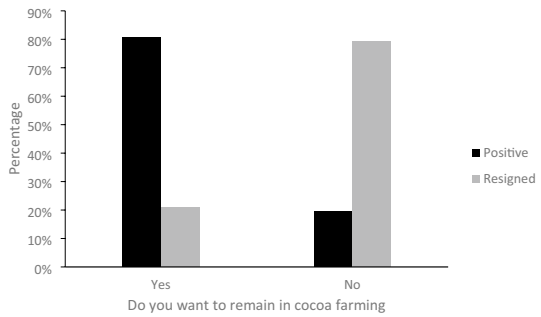


Table 9 Relationship between attitudes and aspiration variables

Aspiration variable	χ^2 (df)	Significance (<i>p</i>)
Want to remain in cocoa farming	31.562 (1)	0.000***
Want to remain in a rural or urban area	3.798 (2)	0.051
Want to live near or far from family	3.150 (1)	0.076

df degree of freedom

*** $p \leq 0.001$, respectively

Young farmers' reports about their preferred residence are noteworthy, as it suggests that the aspiration to live in an urban rather than a rural space is not related to attitudes towards farming. This finding has to be considered alongside other studies that present an urban lifestyle as attractive enough to shift young people's aspirations away from farming (White 2012; Diao et al. 2019). One way of reconciling the apparent contradiction is to bear in mind that this study concerns young people already in farming, the majority of whom want to remain in farming for the long term (see Fig. 8). Another interpretation of is that young people may not see farming as requiring their constant physical presence; rather, farming can be configured into their lives as an income-generating activity in which they can engage seasonally and remotely, or to which they may return after a period of time away (Berckmoes and White 2014; Okali and Sumberg 2012; Yeboah and Jayne 2020).

Conclusions

The study has demonstrated heterogeneity in the attitudes of young, rural cocoa farmers. Cluster analysis yielded two types of young farmers according to their attitude to their occupation: in general terms, the 'positive' farmers were happy with both their present circumstances and had a positive outlook about the future cocoa farming. The 'resigned' young farmers groups were unhappy with their current circumstances but willing to believe that the future could be more hopeful for cocoa farmers such as themselves.



Marital status was found to be correlated with the 'positive' young farmer type, suggesting that farmers who have settled down may feel more satisfaction with farming, perhaps because other opportunities are closed off to them over time (see Huijsmans et al. 2021). Another explanation is that married cocoa farmers acquire resources of land and family labour through marriage that may benefit their economic activities (Lambrecht 2016; Higgins and Frenrich 2011; Duncan 2010), although the literature would suggest that the benefits of marriage in this sense are unequal for men and women (Berckmoes and White 2014; Huijsmans et al. 2021).

The study also found that the young farmer types were unevenly distributed across the three sites, buttressing previous research that suggests a relationship between location and farmer typologies (see Carmona et al. 2010; Lincoln and Ardoin 2016). Young people in areas where cocoa farming was the main occupation out of a limited set of economic activities were less likely to be satisfied with cocoa farming, suggesting a forced choice. Indeed, the 'resigned' young farmer was over-represented in Asumura, the town with the least range of economic activity. By contrast, young cocoa farmers in the other two towns with a wider range of livelihood activities tended to be more positive in their outlook about cocoa farming as an occupation. The location variable is thus related to another finding, which is that young farmers in the 'positive' group tended to have a second occupation besides farming.

The finding that young farmers in the 'positive' category of the typology tend to know and be influenced by adults farmers lends support to a previous study in which role models were reported by young people to be an important motivation for their involvement in farming (Leavy and Hossain 2014). These findings support the idea that one's opportunity space, and consequently one's aspirations, is shaped by personal experience as well as by one's social, economic, and ecological environment as well (Sumberg et al. 2019; Dilley et al. 2021).

Unsurprisingly, young farmers who felt resigned to farming were less likely to aspire to stay with this economic activity. What is perhaps more surprising is the lack of statistically significant difference between the two types of young cocoa farmers in preference for an urban versus rural residence. In other words, young farmers with resigned attitudes towards their farming occupation did not necessarily prefer an urban residence any more than those with a more positive outlook on farming. Thus, the desire to experience urban life may not necessarily indicate a permanent and wholesale rejection of rural life and rural farming. Again, this aligns with research that shows that young people move between urban and rural areas, and engage in livelihood activities in both spaces (e.g. Berckmoes and White 2014; Langevang and Gough 2009; Okali and Sumberg 2012). Thus, although for many young people farming may not be a preferred choice of livelihood activity (Leavy and Hossain 2014), many young people engage in primary production as one of a multiplex of income-making activities, as a fall-back when other options fail, or as a stepping stone to other economic opportunities (Anyidoho et al. 2012b; Carreras et al. 2020; Okali and Sumberg 2012; Mausch et al. 2021).

Finally, concerning our methodology, the study yields a number of intriguing findings, such as the correlation of attitudes with marital status and the lack of correlation of attitudes with an aspiration for an urban residence. While we have



provided some explanations, based in existing literature, for these findings that appear surprising or counterintuitive, follow-up qualitative inquiry would help to explain and contextualize the quantitative analysis. Moreover, given the diversity of young farmers captured in our study, further research could explore patterns of attitudes, aspirations and motivations among young farmers in different age groups and with various forms of engagement with farming. Nonetheless, as an exploration of an under-researched area, this inquiry into young farmers' attitudes, motivations and aspirations to farming could lead to more relevant and responsive policy interventions that take cognisance of young people's present lived experiences and imagined futures, as these are shaped by social, economic and geographic contexts.

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Declarations

Conflict of interest On behalf of all authors, the corresponding author states that there is no conflict of interest.

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