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Readiness of youth in rural agribusiness (case of West Java, Indonesia)

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Abstract. As a system, agribusiness is complex in its nature. The consequence is, whoever wants to enter the system is required to be ready. The complexity of agribusiness has made it less liked and under-valued by the youth. The implication of this is that the age structure of agribusiness agents in Indonesia became older. Paradox to that, it is identified that in West Java plateau, educated and skilled youths choose to enter into agribusiness. This research aimed to: (1) descriptively analyse the readiness of agribusiness young actors (AYA) in performing agribusiness; (2) analyse the readiness difference of AYA; (3) analyse personal, interesting and push factors that influence the readiness of AYA, and; (4) formulate readiness reinforcement strategy for AYA. This research designed integrally and conducted in West Java for 10 months (July 2014 - July 2015). Primary data was collected from structured interview with 280 respondents, then was tabulated and analysed statistically using SEM and LISREL 8.80 analysis tools. The result of the research shows that the readiness of AYA is high. The readiness of AYA is evidently different across areas. This readiness is manifestly influenced by pull factors as well as personal characteristic. In order to gain readiness earlier, those interesting factors as well as dominant personal character should become the primary contents in young agents' extension. The recommendation is to develop a synergy with stakeholders through multiple helix extension. **Keywords:** agribusiness, youth, readiness

1. Introduction

As a system, agribusiness is complex, holistic, and ecologically demanded in its nature. It is since not only that it consists of several subsystem (up-stream, on-farm, down-stream and supporting system), but also integrated in ecosystem, social as well as geological system. For its complexity, agribusiness is 'labeled' as risky and full of uncertainty. The complexity requires agribusiness agents to think systematically, act adaptively and anticipatively [1–3]. Agribusiness agents are required to be ready to anticipate, face and adapt with complexities. Collective perspective of [4–7] view readiness as a phase that one must pass as a prerequisite to learn towards next development. Readiness is a skill of performing certain activity in certain situation. Readiness is a product of learning process that not only mature, but also reach the level of being capable to be self-prepared in performing predetermined activities.

Readiness is needed by anyone who is willing to perform certain activity, including those who are willing to enter agribusiness in rural area. According to [8], rural area is a miniature of a developing country, thus it is regarded as close to poverty, limited access, malnutrition, low-educated, and inequalities. Rural area is also started to closely related with water, food, and environmental crisis, as well as agro-ecosystem damages [11]. Rural area that once was imaged as resources-abundant is now



started to suffer resource-scarce and inequalities. As a dominant sector of rural area, agribusiness has for a long time being on its human resources, institutional, land, job opportunity, commodity, and budget stagnancies. The implication is that agriculture is under-valued and left for migration (brain-drained) by the youth, thus its agents structure became aged.

Paradox with general agricultural human resources condition in rural area, it is identified that there are educated and skilled youths in West Java plateau that are courageous to went home from their migration area to be engaged in rural agribusiness. [13] noted that out of 4.6 million farmers in West Java, 1.6 million (34.2%) are young agents, that is those who are aged 15-39 year-old. Approximately 10-12 percent of total youth agribusiness agents were educated and skilled. They are, according to [13], [14] and [15] is regarded as the brain gain agents. It refers to professional youths who came home from their migration area. The occurred tendency is that over 65% of educated and skilled youth agribusiness agents (AYA) are in agro-ecosystem zone of plateau.

This phenomenon is interesting to be studied and analyzed, since there have been no studies on this topic, and it also paradox with the under-valuation of common educated youth. How could they be encouraged to come home? Why were they courageous to enter rural area and agricultural sector that are said to be unpromising, 'static' labeled, surfeit, old-fashioned, and under-valued by common youth? How could they be courageous to face and adapt with the complex rural and agricultural environments? This research compiled of five sections: the conceptual framework of readiness, research method, existing condition of agribusiness agents' readiness, analysis of internal and external factors that affect readiness, and readiness reinforcement strategy.

2. Conceptual Framework of Readiness

Readiness is collectively defined by [9-10] as: (1) the whole response or skill pattern owned by individual at given situation; (2) a phase that individual should pass to enter the next development; (3) a prerequisite to learn next phase and/or to perform certain task in given situation; and, (4) a product of training-learning and maturation processes. The proposition is that one should be ready at certain phase before or in entering the next development. Indeed, according to Louis Pasteur [16], invention is not a coincidental thing; when the time of observation, invention is only close to the prepared thought. [4] linked readiness with changes, including knowledge, behavior, and skill [17]).

Readiness attributed to personal, formed as the unity of several readiness. [18] identified seven categories of readiness: human resources, learning management system, learning, content, information technology, financial, and marketing readiness. [19] identified four models of readiness: technological ([5], [18]), cultural ([6]), content ([6], [5], [8]), and demographic factor readiness [18]. Regarding to business and agribusiness, [21], [5], [22], [6], [8], [23] and [24] identified eight readiness. According to [24], beginners in non-agricultural community, including alumni of high agricultural education, will need longer readiness (learning) to be able to become a proper and competitive agro-preneurs (entrepreneurs in agribusiness).

The readiness of young agents in rural agribusiness is influenced by personal characteristic. [25–28] and [12] identified 11 socio-psychological factors that influence the readiness of brain gain agents. Those are: perception, emotion, trust, habit, willingness, motivation, orientation, insight, awareness, decision, and participation. The research by [27] insisted that age, education, working experience (entrepreneurship) and motivation affect the readiness. The characteristic of AYA given in this research refers to characteristic attributed to or owned by young agribusiness agents, including personal characteristics (age, education, working experience, motivation, network participation, perception on agribusiness, ecological agribusiness insight, and decision to engage in agribusiness) as well as business characteristics (such as business type or field to develop, access to productive resources, asset utilization, asset holding, communication and information technology mastery, and capital).

The readiness of young agents to agribusiness also influenced by pull factors. [28–30], [27], and [12] viewed the brain gain pull factors as anything exist in home area (rural or agribusiness system area) that draw emigrants (especially those who are educated and skilled in cities, dominant islands,

and overseas) to go back home (permanently) to their homeland (home country, underdeveloped islands, and villages) and work or become engaged in agribusiness. These factors can be in form of personal, social-cultural, economic, physical, technological, environmental, and institutional factors. Agribusiness pull factors given in this research refers to: facilities, leading commodities, communication and information technology network, agribusiness (technological) innovation, market development, commodity price, local government's aid or incentive, environmental condition or potential, partnership (cooperation), and agribusiness asset).

Deductively, the readiness of young agents to go back home and to be engaged in agribusiness in villages also influenced by push factors. Collectively, [25], [26], [27] and [12] defined push factors as anything that comes or sourced inside individual (such as low incentive rate in cities; the absence of pleasure and freedom; the desire to gain acknowledgement; higher career expectation; self-awareness; etc.) and/or from their surroundings (e.g. government policy [including incentive, facilitating, aids, dispensations, investment assurance, occupational assurance], advocating and agreement association [organizations, communities, social networks, social media], career task or opportunity provided by companies or government, company's policies, political and security condition, educational and research transformations, group recommendations, family's pressure, and mass media campaign) that encourage individual to take a decision or to perform certain action. According to deductions, the next step is to arrange and link logical line of the research.

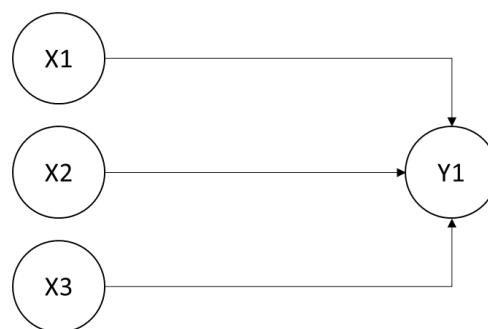


Figure 1. Scheme of Operational Logical Framework of the Relationship between the readiness of AYA and Pull Factors, the Characteristic of AYA and Push Factors

Note of figure 1:

Agribusiness pull factors (X1): access to agribusiness supporting facilities, access to public services, commodity excellences, access to communication and information technology, access to agribusiness technological innovation, access to market, access to aids or incentives, environmental potential, social capital, access to agribusiness asset

Characteristics of AYA (X2): age, level of education, work, experience, decision to do agribusiness, motivation to do agribusiness, networking/organizational experience, perception on agribusiness, future agribusiness insight, type of agribusiness, access to productive resources, communication and information technology mastery.

Agribusiness push factors (X3): support of extension, service institutional policies, support of university/college, support of research institution, agribusiness company program, support of information network, non-governmental organization advocating, support of group/association/ community, support of family

According to figure 1, the following hypotheses are proposed: (1) there are significant and influential relationship between agribusiness pull factors (X1), characteristics of AYA (X2), agribusiness push factors (X3) and the readiness of AYA in agribusiness (Y1); (2) characteristics of AYA (except age) are directly related to their perception on agribusiness pull and push factors; (3) the readiness of AYA in agribusiness is directly influenced by their characteristics, agribusiness pull and push factors; and (4) the readiness of AYA in agribusiness as well as their willingness to go home to their villages are indirectly influenced by agribusiness pull and push factors.

3. Research Method

This positivistic paradigm research was designed integrally (mixed method) by placing quantitative design (explanatory survey) dominantly, and qualitative design (in-depth interview, focused group discussion [FGD] and observation) less dominantly. This research was conducted in agro-ecosystem zone of West Java Plateau, with sample locations were: Cianjur Regency (west area), Bandung Regency (central area), and Garut Regency (east area). Furthermore, sample wards were taken deliberately for each regency. The selection of locations was based on following considerations: (1) sampling framework of educated and skilled AYA only identified manifestly in plateau area; (2) educated and skilled AYA in plateau area have the experience of migration to cities, dominant islands, and overseas; and (3) West Java Plateau is the production center of modern agribusiness in Indonesia. A number of 145,064 young (15-35 years old), as well as high-educated and skilled agribusiness agents (from three selected areas) set as research population. From this population, 280 people (102 of Cianjur, 75 of Bandung, 103 of Garut Regencies) were proportionally taken as a sample. Statistically, this number of respondents had met the rule of thumb of SEM analysis tool that requires the maximum sample of 100-150 respondents, or five times of operated indicator. For in-depth interview and FGD, 10 key informants selected deliberately from each location. Primary data was collected through structured interview technique using questionnaire, FGD, in-depth interview, and observation as assisting tools. Whereas, secondary data was obtained from related institution through desk study. Obtained data were then tabulated and analyzed descriptively using Structure Equation Model (ESM) and LISREL 8.80 analysis tools.

4. Results and Discussion

4.1. Condition of AYA Readiness

Specifically, there were only a small number of educated and skilled young agents that are ready enough to go back to their villages and become engaged in agribusiness. In fact, they were only 14.67% of them in West Java plateau, and they were not spread evenly (9.73%-21.38%). The lowest percentage was in Garut Regency (5.51%). Educated youth that are regarded as ready are generally those who: (1) develop non-vegetable alternative business, e.g. oyster mushrooms cultivation, rabbit farm, community media management, and agro-industry; (2) practically experienced, e.g. ex-formulator who became distributor of production input, ex-trader of main market who became supplier, ex-extension facilitator who became extension worker or farmer, etc.; (3) having experience in courses, apprenticeship, and agricultural field school, such as alumni of overseas agribusiness apprenticeship, alumni of "SLPHT" (Field School of Integrated Pest Control), "SLPTT" (Field School of Integrated Crop Management), alumni of seed breeding course, and children of agribusiness agents who were apprenticed of their parents; and (4) having network and organizational experience, such as campus activity, LSM and youth organization. However, generally, 61.65% of AYA were categorized as ready and very ready. Indeed, the readiness of AYA in Cianjur Regency reached 70.34%. Partially, agribusiness readiness level of young agents was only weak on its management, personal, asset/equipment, and networking aspect.

Personal and networking readiness weak point of AYA occurred because of: (1) AYA had a weak access to assets (especially land), thus they were depending on their parents. Therefore, AYA was quite hard to be involved in innovation decision, especially in early periods (1-2 years), since they were still under their parents' control. The phenomenon occurred primarily in AYA who reproduce their parents' business; and (2) the condition of agribusiness communities and groups were still weak. There were indeed business groups, yet they were static, since they were established in top-down model. Farmers groups were dominated by the elders; thus, it was not conducive for AYA who have double-cultural identity. There was indeed a network, yet its relationship was interpersonal, such as farmer-broker, farmer-investor, and broker-supplier. Main market, agro-market, and modern market

developed, yet they were can only be accessed mostly by brokers and suppliers, and less by farmers. Internet, cell phone, smart phone, and social media could be accessed by AYA, yet only as communication and source of information, not as promotional and business media. IT-based extension (cyber extension) was identified, yet predominantly operated by government's extension worker. (figure 2).

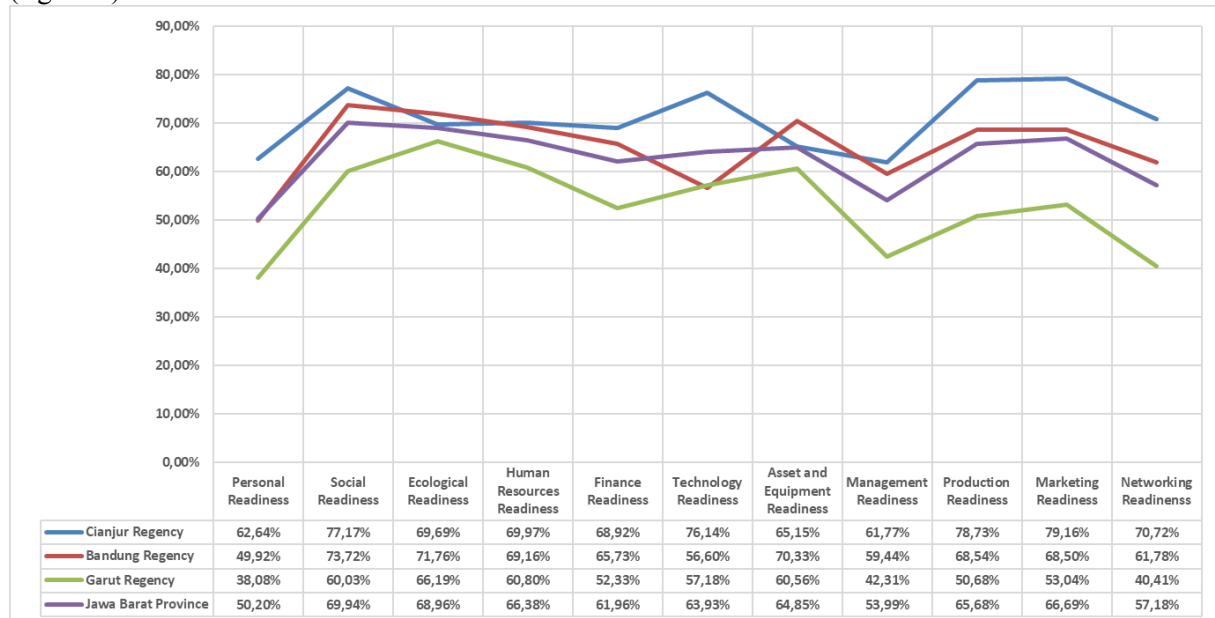


Figure 2. Agribusiness Readiness of Educated and Skilled Young Agents in West Java Plateau

The main things that must be prepared by the brain gain agents to come back home and to be engaged in rural agribusiness are INTENTION and MENTAL (social readiness). Social readiness is the gate of early stage readiness (1-2 years) and a mental test to enter next readiness stages. Generally, AYA had already entered their development phase. This could be seen from their high social readiness. As a connected, creative, and communicative generation, the social and business network of young agents is faster and broader than the old agents. The problem is, individualism still occupies AYA, thus they are hard to be united in a group. Some creative and innovative AYA create and develop their social readiness through social media network, social organization, and advocating institution. In their community, AYA are connected and opened social group (strong linking), yet weak in bonding. Generally (Figure 3), readiness level of young agribusiness agents in West Java Plateau was high (50-80%). However, spatially, readiness level of young agribusiness agents in Cianjur Regency (Figure 4) was higher than those in Bandung Regency (Figure 5) and Garut Regency (Figure 6).

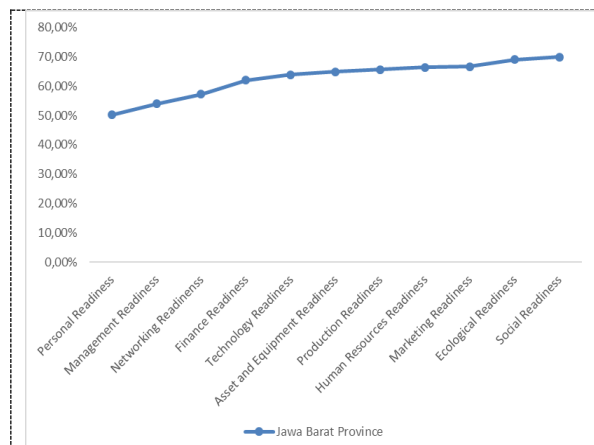


Figure 3. Readiness Level of Young Agribusiness Agents in West Java Plateau

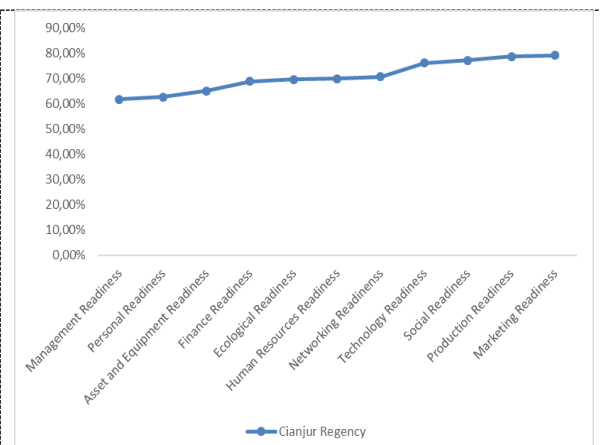


Figure 4. Readiness Level of Young Agribusiness Agents in Cianjur Regency Plateau

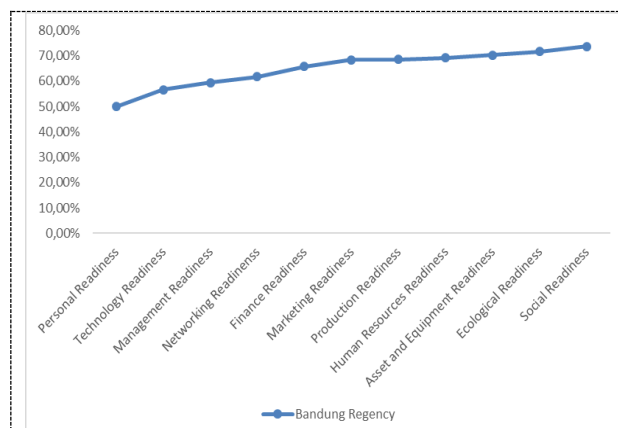


Figure 5. Readiness Level of Young Agribusiness Agents in Bandung Regency Plateau

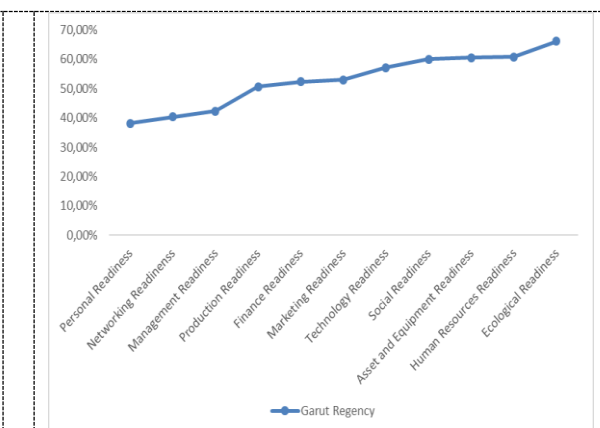


Figure 6. Readiness Level of Young Agribusiness Agents in Garut Regency Plateau

4.2. The Differences of Pull Factors, Personal Characteristic, Push Factors, and Readiness of Young Agribusiness Agents

Analysis of differential test among the three locations was conducted using variance analysis (Anova). If the test result is significant ($p\text{-value} < 0.05$), then it is continued with Newmann Keuls post hoc. Test result will reject H_0 if $p\text{-value} < 0.05$. Table 1 shows that the test result of the five variables (pull factors, personal characteristic, push factors, and agribusiness readiness variables) has $p\text{-value} < 0.05$; therefore, it can be stated that the four tested factors are significantly different. Different to other variables, AYA characteristic has $p\text{-value} > 0.05$, thus it can be concluded that it is not significantly different. This condition is precisely predictable that generally, AYA have a relatively similar age, education, experience, motivation, perception, insight, working, and networking level. This means that the features of those youngster are attributed to their characteristic, thus it shows a relatively homogenous condition. According to Newmann Keuls post hoc, it is known that the relatively good pull factors, push factors, and agribusiness readiness is found in Cianjur Regency (table 1).

Table 1. Result of Anova Calculation of Personal Characteristic, Pull Factors, Push Factors, and Readiness of AYA

Variable	Area	Mean	Deviation Standard	p-value
Pull Factors (X1)	Cianjur	2,875 ^b	0,368	0,000
	Bandung	2,616 ^a	0,419	
	Garut	2,561 ^a	0,394	
Characteristic of Agribusiness Young Agents (X2)	Cianjur	2,927 ^a	0,273	0,101
	Bandung	2,878 ^a	0,320	
	Garut	2,834 ^a	0,334	
Push Factors (X3)	Cianjur	2,460 ^b	0,436	0,000
	Bandung	1,968 ^a	0,416	
	Garut	1,933 ^a	0,593	
Agribusiness Readiness (Y1)	Cianjur	2,880 ^c	0,346	0,000
	Bandung	2,736 ^b	0,519	
	Garut	2,429 ^a	0,467	

Note: Similar letter notation shows similar group

4.3. Factors that Influence Readiness

According to the result of Confirmatory Factor Analysis (CFA), it is known that pull factors, personal characteristic, push factors, and agribusiness readiness have better validity on each indicator (t count value > t table). According to standardized loading factor (λ) value in figure 7, it is known that at the degree of 5% ($t=1.97$), dominant indicators of pull factor (X1) are: innovation (X1.5), technology (X1.4), institutional (X1.9), facility (X1.1), commodity (X1.3), environment (X1.8), public service (X1.2), and market (X1.6). Dominant indicators of personal characteristic (X2) are: motivation (X2.5), decision (X2.4), agribusiness insight (X2.8), perception (X2.7), technology (X2.11), and education (X2.2). Dominant indicators of push factors (X3) are: service institution's support (X3.2), university/college (X3.3), extension institution (X3.1), research institution (X3.4), agro-company (X3.5), information network (X3.6), community (X3.8), and NGO (X3.7). Dominant indicators of readiness variable (Y1) are: personal readiness (Y1.1) and management readiness (Y1.8), followed by social readiness (Y1.2), production readiness (Y1.9), marketing readiness (Y1.10), financial readiness (Y1.5), networking readiness (Y1.11), technological readiness (Y1.6), human resources (SDM) readiness (Y1.4), asset and equipment readiness (Y1.7), and environmental readiness (Y1.3). According to the λ value and measurement error as well as formula to calculate Construct Reliability (CR), it can be concluded that the value of X1 (0.84), X2 (0.71), X3 (0.92) and Y1 (0.94) that exceed 0.70 threshold are reliable, and their indicators are quite consistent to measure their construct.

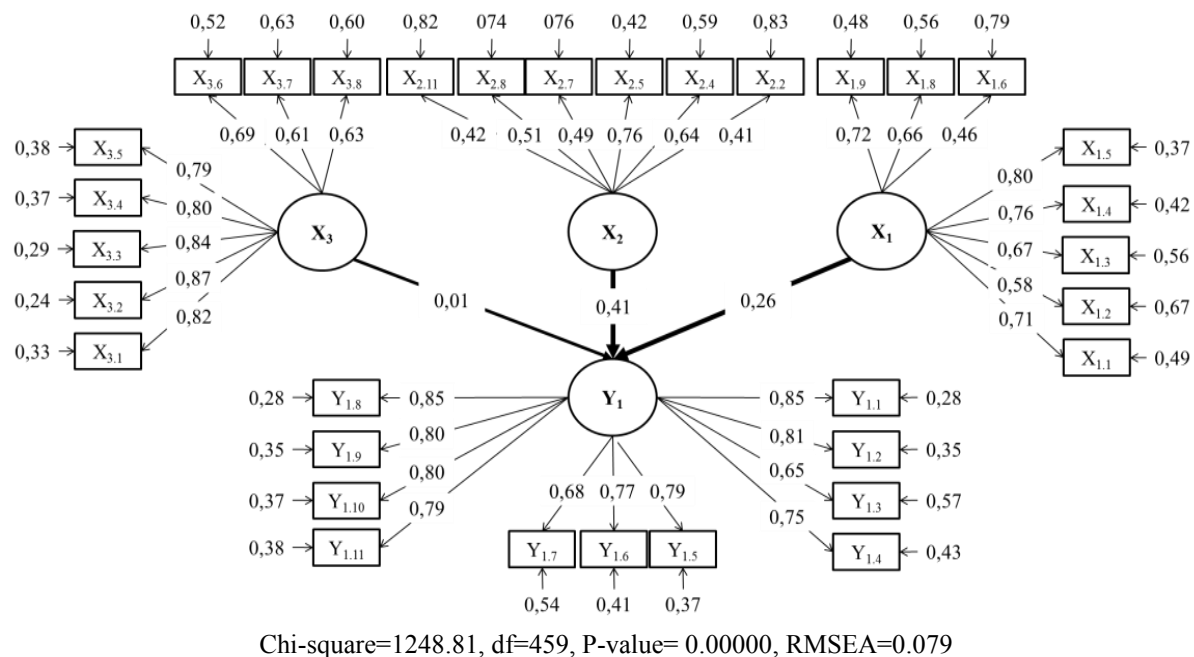


Figure 7. Structural Model of the Influence of Pull Factors, Personal Characteristic, and Push Factors on the Readiness of Agribusiness Young Agents

According to recovery model (figure 7), by the assistance of SIMPLIS output on LISREL 8.80, a total model test was conducted. According to Goodness of fit Statistics (Table 2) it can be said that RMR and IFI result in a conclusion of Good Fit. Furthermore, according to χ^2/df , Confident interval, RMSEA, NFI and NNFI, it can be concluded that the model is fair enough to be used. However, for χ^2 the result shows that the model does not fit the data. From the combination of these various measurements, it can be concluded that the compatibility of all models is good to be used.

Table 2. Index of Goodness of Fit Index on SEM

Fit Measure	Good Fit	Acceptable Fit	Score Research	Result
χ^2	$\leq \chi^2$ table (509,95)		1248.81	Not Fit
P value	$0.05 < P < 1.00$	$0.01 < P < 0.05$	0.000	Not Fit
χ^2/df	$0 \leq \chi^2/df \leq 2$	$2 \leq \chi^2/df \leq 3$	2.721	Acceptable Fit
RMSEA	$0 \leq RMSEA \leq 0.05$	$0.05 < RMSEA \leq 0.08$	0.079	Acceptable Fit
Confidence Interval (CI)	close to RMSEA, left boundary of CI = 0.00	close to RMSEA	(0.073;0.084)	Acceptable Fit
RMR	$0 \leq RMR \leq 0.05$	$0.05 < RMR \leq 0.07$	0.028	Good Fit
NFI	$0.95 \leq NFI \leq 1.00$	$0.90 \leq NFI < 0.95$	0.95	Acceptable Fit
NNFI	$0.97 \leq NNFI \leq 1.00$	$0.90 \leq NNFI < 0.97$	0.96	Acceptable Fit
CFI	$0.97 \leq CFI \leq 1.00$	$0.90 \leq CFI < 0.97$	0.96	Acceptable Fit
GFI	$0.90 \leq GFI \leq 1.00$	$0.80 \leq GFI < 0.90$	0.79	Not Fit
IFI	$0.97 \leq IFI \leq 1.00$	$0.90 \leq IFI < 0.97$	0.97	Good Fit

According to structural model and output of LISREL (standardized parameter estimation), it is known that: (1) total influence of pull factors on agribusiness readiness is 15,69% (significant at 10% level, t table>1.65); (2) total influence of personal characteristic on readiness is 26,37% (significant at 5% level, t table = 1.97); (3) total influence of push factors on agribusiness readiness is 0,64%, yet it is not significant, both at 5% and 10% level; and (4) total influence of pull factors, personal

characteristic, and push factors on agribusiness readiness is 42.70%. This means that there are as much as 57.30% of other influencing factors that are not accommodated by the model.

4.4. Reinforcement Strategy of AYA Readiness

According to the results of FGD and in-depth interview with key informants, it is known that the readiness of AYA in agribusiness varies and is not gained all at once (evolutional). Personally, the creative process and entrepreneurship development stages are similar. However, the realization varies for each AYA with their various personal characteristics. Though they are differed, their process tends to be started with social readiness. Agribusiness personal readiness is actually a continuous learning process (long agribusiness learning). Learning readiness will continue to go as long as the social, economic, climate and environmental changes take place, as long as opportunities and threats develop, and as long as risk and uncertainty are attributed to agribusiness. According to the agribusiness style and process experienced by AYA, a reinforcement strategy of AYA readiness can be formulated as following (Table 3).

Table 3. Priority Order of AYA Readiness Reinforcement According to the Type of Agribusiness

Agribusiness Type	Priority Order of the Readiness of Young Agribusiness Agents										
	Personal	Social	Environ-ment	Human Resources	Finan-cial	Techno-logy	Asset	Manage-ment	Produc-tion	Marketing	Net-working
• Production Business (On Farm)	1	5	10	4	6	7	2	11	3	8	9
• Input Service (Agricultural Production Infrastructure Store)	4	6	10	8	7	1	2	9	11	5	3
• Distributor Input (Broker/Formulator)	3	5	7	10	6	4	8	9	11	2	1
• Seed Breeder	1	7	11	5	3	2	4	10	6	9	8
• Packing House	1	10	11	5	2	3	4	8	6	9	7
• Agro-industry	1	7	11	8	3	2	4	10	5	6	9
• Marketing (Broker)	3	5	6	9	4	11	8	10	7	1	2
• Market Supplier (Retail)	5	4	11	9	2	6	8	7	10	1	3
• Agribusiness Institution Manager	2	1	9	10	7	4	11	8	6	3	5
• Extension/Empowering	1	2	3	10	11	5	9	8	7	4	6
• Financial Service	4	3	11	6	1	9	8	5	10	7	2
• Agro-tourism/Eco-tourism	3	3	1	6	9	2	7	8	1	5	4
• Alternative Business	1	8	2	9	10	5	11	6	3	7	4

Source: Results of FGD and In-depth Interview in West Java in 2015

5. Conclusion and Suggestions

Agribusiness readiness of AYA is high. Intention, motivation (n-ach), and mental is the core of all readiness. AYA is still weak in personal, management, and networking readiness. Readiness manifestly varies, both inter-locations and inter-agribusiness agents. Common AYA business is production (on-farm) and vegetable commodities. Potential non-personal readiness for alternative non-vegetable and off-farm business development is still minimum. The readiness of AYA is significantly influenced by pull factors, personal characteristic, as well as push factors. The recommendation of this research is that a reinforcement strategy of AYA readiness can be a reference for any party who is

willing to conduct extension and empowerment, especially to determine the starting point and track of empowerment. According to the diversity of the type of AYA readiness, a plural extension approach (pluralistic model) is needed through a synergy of all extension agents in multiple helix model of agribusiness system

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