



2016

"Small and Medium-sized  
Enterprises Competitiveness"

ISBN 978-602-7577-70-1



# PROCEEDING

## INTERNATIONAL CONFERENCE

Agribusiness Development for Human Welfare



**UMY**

Universitas  
Muhammadiyah  
Yogyakarta

Unggul  Islami

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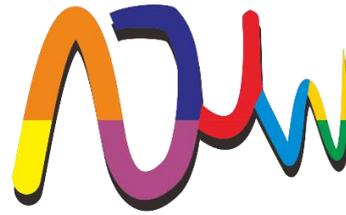
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AGRIBUSINESS  
DEVELOPMENT FOR  
HUMAN WELFARE

*“Small and Medium-sized  
Enterprises Competitiveness”*



Agribusiness Development  
for Human Welfare

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## **EDITOR FOREWORD**

The economic integrations by ASEAN certainly have given a major influence on Small and Medium-sized Enterprises (SMEs). Beside economic integration in the form of free trade area (FTA) that has been going on since the early 2000s, economic integration in the form of ASEAN Economic Community (AEC) has been ongoing since the beginning of 2016. Through this integration, SMEs have opportunity to expand access to markets, technology, and capital. But at the same time SMEs are required to improve their competitiveness in order to survive in the market.

In order to explore ideas, concept, and innovations related to the competitiveness of SMEs, International Conference on Agribusiness Development for Human Welfare (ADHW 2016) was held in Yogyakarta on May 14, 2016. The conference organized by Department of Agribusiness Universitas Muhammadiyah Yogyakarta, in collaboration with Department of Agribusiness and Information System Universiti Putra Malaysia, Department of Agro-Industrial Technology Kasetsart University, Department of Agriculture Socio-Economics Universitas Gadjah Mada, Department of Agriculture Socio-Economics of Universitas Brawijaya, Indonesian Society of Agriculture Economics, Agribusiness Association of Indonesia. Hopefully proceedings of ADHW 2016 provide stimulus for increasing competitiveness of SMEs in ASEAN, especially in Indonesia.

Furthermore, we are grateful to Allah, the Sustainer of all word, who always makes it easy for our affairs. We would like to acknowledge with thanks to all the institution and individual who joined with resources and efforts in organizing the conference that resulted in the papers which are published in this proceeding. Special thanks to all authors and discussants who contributed with their intellectual capital and responded to our call papers. Thanks and acknowledgment are also due to all reviewers of the conference who helped in evaluating submitted papers; and to the members of the Organization Committee, who ensured smooth execution of the event.

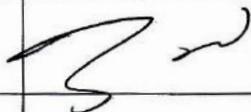
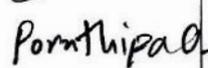
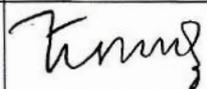
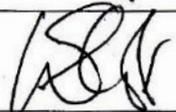
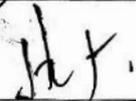
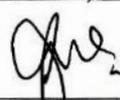
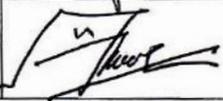
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## PREFACE

Assalaamualaikum, Warahmatullaahi., Wabarakaatuh.  
Dear Honorable Governor of Yogyakarta Special Province  
Dear respectable Prof. Dr. Zainal Abidin Mohamed  
Dear respectable Asist. Prof. Pornthipa Ongkunaruk  
Dear respectable Rector of UMY Prof. Dr. Bambang Cipto, MA.  
Dear all invited Guests, Speakers, and Participants of International seminar of ADHW 2016.

Alhamdulillah, all praise be to the Almighty God, so that we can be gathering here today at Muhammadiyah University of Yogyakarta in order to attend the Conference on Agribusiness Development for Human Welfare (ADHW) 2016.

Ladies and Gentlemen,

On behalf of the committee, I would like to say welcome to this International Conference on ADHW 2016 and thank you for attending our invitation.

Especially, we are grateful to invited speakers, Prof. Zainal Abidin Mohamed and Asist. Prof. Pornthipa Ongkunaruk, for their willingness to share information and thoughts in this conference. As a bit report, that this conference has been attended by 85 speakers coming from five countries.

This conference entitled "Small and Medium-sized Enterprise Competitiveness". ASEAN Economic Community is the largest economic integration that is going to be implemented at the beginning of 2016 (December 31, 2015). Through this integration, SMEs will have opportunity to expand access to markets, technology, and capital. But at the same time SMEs are required to improve their competitiveness in order to survive in the market. We expect that this seminar is capable of producing thoughts building SMEs within ASEAN, especially Indonesia, to face the free trade.

This event can be done by support and efforts from all sides. Therefore, I would like to say thank you to all committee members having worked hard to conduct this event. We, as the organizer committee, do apologize when there is a shortage in conducting this event.

Wassalamualaikum, Warahmatullaahi., Wabarakaatuh.

Chairman  
International Conference on ADHW 2016



Dr. Aris Slamet Widodo, SP., MSc.

## **WORDS OF WELCOME**

Assalamu'alaikum warahmatullahi wabarakatuh

Alhamdulillah, all praise be to Allah SWT, who has given us His blessings so that this International Seminar of Agribusiness Development for Human Welfare (ADHW) 2016 entitled "Small and Medium-sized Enterprises Competitiveness" can be conducted. This International Conference is held in cooperation among Agribusiness Study Program of Muhammadiyah University of Yogyakarta with Putra University of Malaysia (UPM), Kasetsart University (KU), Association of Indonesian Agricultural Economy (PERHEPI), and Agribusiness Association of Indonesia (AAI), Universitas Gadjah Mada (UGM) and Universitas Brawijaya (UB).

Countries of ASEAN members like Indonesia, Malaysia, and Thailand have more than 90% Small and Medium-sized Enterprises (SMEs). In general, SMEs play important role in economic developments such as in terms of employment, added value, improve foreign exchange, and economic growth. For Indonesia, the role of SMEs is limited to employment and added value, while the foreign exchange from SMEs is still low. According to the General Director of SMEs of Industrial Ministry, in 2013 the total SMEs being able to pass through export market is just under 5 percent. For that required many breakthrough and innovation so that the role of SMEs becomes real economic development, especially in Indonesia, and generally in ASEAN countries.

On behalf of Agribusiness Department of Universitas Muhammadiyah Yogyakarta, we would like to express our gratitude Putra University of Malaysia (UPM), Kasetsart University (KU), Association of Indonesian Agricultural Economy (PERHEPI), Agribusiness Association of Indonesia (AAI), Universitas Gadjah Mada (UGM) and Universitas Brawijaya (UB) for all supports, sponsors, and all committee members having worked so hard that this International Conference can be conducted.

Hopefully, these synergies coming from various parties can provide contribution for developing SMEs in Indonesia and other ASEAN countries as well.

Wassalamu'alaikum warahmatullahi wabarakatuh

Head of Agribusiness Department  
Universitas Muhammadiyah Yogyakarta



Ir. Eni Istiyanti, MP.



**Gubernur**

**Daerah Istimewa Yogyakarta**

**Sambutan**

**KONFERENSI INTERNASIONAL**

**“*AGRIBUSINESS DEVELOPMENT FOR HUMAN WELFARE*”**

**Yogyakarta, 14 Mei 2016**

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Assalamu'alaikum Wr. Wb.

Salam sejahtera untuk kita semua.

Yang Saya hormati :

- Rektor Universitas Muhammadiyah Yogyakarta;
- Para Narasumber;
- Hadirin dan Para Peserta yang berbahagia,

Puji dan syukur marilah kita panjatkan kehadirat Allah SWT karena hanya atas limpahan rahmat serta karunia-Nya, kita dapat hadir pada kesempatan acara **Konferensi Internasional “*Agribusiness Development For Human Welfare*”** ini dalam keadaan sehat wal’afiat.

Pada kesempatan kali ini, secara ringkas Saya akan menyampaikan mengenai industri kecil menengah nasional yang menjadi tema pada pembukaan Seminar Internasional “*Agribusiness Development For Human Welfare*” ini.

**Hadirin dan Saudara-saudara sekalian yang Saya hormati,**

Berdasarkan data BPS, pertumbuhan industri pengolahan nonmigas pada tahun 2015 secara kumulatif sebesar 5,04%; lebih tinggi dari pertumbuhan ekonomi (PDB) pada periode yang sama sebesar 4,79%. Pada periode Januari-Desember 2015, nilai ekspor produk industri pengolahan nonmigas mencapai USD 106,63 Milyar, dan nilai impor mencapai USD 108,95 milyar, sehingga neraca perdagangan industri pengolahan nonmigas pada periode yang sama sebesar USD 2,32 milyar (neraca defisit).

Usaha pemerintah untuk memperkecil defisit di atas, salah satunya dengan cara memberdayakan Industri Kecil dan Menengah (IKM) yang merupakan bagian penting dalam perkembangan industri nasional. Sampai saat ini, Industri Kecil dan Menengah

telah berkontribusi sebesar 34,82% terhadap pertumbuhan industri pengolahan nonmigas secara keseluruhan.

Angka ini dapat tercapai karena dukungan lebih kurang 3,6 juta unit usaha, yang merupakan 90 persen dari total unit usaha insutri nasional. Jumlah unit usaha tersebut telah mampu menyerap tenaga kerja sebesar 8,7 juta orang, yang tentunya berdampak pada meningkatnya ekonomi nasional serta mengurangi kemiskinan.

Industri Kecil dan Menengah (IKM) memiliki peran yang strategis dalam perekonomian nasional. Hal ini sejalan dengan Visi Pemerintah dalam Rencana Pembangunan Nasional Jangka Menengah (RPJMN) 2015-2019 yaitu *“Terwujudnya Indonesia yang berdaulat, mandiri, dan berkepribadian berlandaskan gotong royong”*.

Untuk lebih meningkatkan peran tersebut, Penumbuhan dan Pengembangan Industri Kecil dan Menengah diarahkan untuk memiliki tujuan jangka menengah guna mewujudkan industri kecil dan industri menengah yang berdaya saing, berperan signifikan dalam penguatan struktur industri nasional, pengentasan kemiskinan dan perluasan kesempatan kerja, serta menghasilkan barang dan/atau jasa Industri untuk keperluan ekspor.

**Hadirin dan Saudara-saudara sekalian,**

Awal tahun ini, kita telah memasuki era Masyarakat Ekonomi ASEAN (MEA). Dengan demikian, perekonomian nasional akan langsung bersaing dengan para pelaku pasar di kawasan ASEAN. Produk dan jasa termasuk investasi negara-negara anggota telas bebas memasuki pasar di kawasan ASEAN.

Dalam rangka menghadapi hal tersebut, Pemerintah mengambil langkah-langkah strategis berupa peningkatan daya saing industri dan mendorong investasi di sektor industri; di mana peningkatan daya saing industri itu sendiri dilakukan melalui penguatan struktur industri dengan melengkapi struktur industri yang masih kosong serta menyiapkan strategi ofensif dan defensif dalam akses pasar.

Pemerintah telah melakukan Penguatan Sektor IKM dengan strategi ofensif dan defensifnya melalui beberapa program pelaksanaan, diantaranya antara lain: Penumbuhan Wirausaha Baru; Pengembangan IKM melalui Pengembangan Produk IKM serta Peningkatan Kemampuan Sentra dan UPT; Pemberian Bantuan Mesin dan Peralatan Produksi; Perluasan Akses Pasar melalui Promosi dan Pameran; Fasilitasi Pendaftaran Hak Kekayaan Intelektual; Fasilitasi Sertifikasi Mutu Produk dan Kemasan; serta Fasilitasi Pembiayaan melalui Skema Kredit Usaha Rakyat (KUR).

Saya berharap agar berbagai program-program pemerintah tersebut dapat didukung secara sinergis oleh seluruh komponen masyarakat. Untuk itu, Saya berpesan kepada Saudara-saudara sekalian agar semua program pemerintah dalam bidang

Industri, khususnya dalam program pemberdayaan Industri Kecil dan Menengah, didukung dengan sepenuh hati, agar dapat lebih bermanfaat bagi masyarakat dalam rangka pengembangan industri kecil menengah.

**Hadirin dan Saudara-saudara sekalian yang Saya hormati,**

Demikian beberapa hal yang dapat Saya sampaikan. Akhirnya dengan memohon ridho Allah Subhanahu Wata'ala, seraya mengucap "*Bismilahirrahmanirrahim*", **Konferensi Internasional "Agribusiness Development For Human Welfare"** dengan ini secara resmi Saya nyatakan dibuka. Semoga Allah SWT memberikan petunjuk, bimbingan, perlindungan dan kemudahan dalam setiap langkah dan upaya kita. Amien.

Sekian dan terima kasih.

Wassalamu'alaikum Wr. Wb.

Yogyakarta, 14 Mei 2016  
GUBERNUR  
DAERAH ISTIMEWA YOGYAKARTA



**HAMENGKU BUWONO X**

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## TECHNOLOGY ADOPTION OF HIGH QUALITY GREENBEANS SEED BY FARMERS' HOUSEHOLD IN CENTRAL JAVA

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### ABSTRACT

The low technology adoption in the application of high quality green bean seeds is identified as main reason for the low farming productivity in Indonesia. A survey was conducted to 80 farmers in Godong District Grobogan Regency Central Java, aimed to analyze factors that affect the decision in technology adoption of the application of high quality green bean seeds in Central Javanese farmers' household. Data were collected through interview with structured questioner and analyzed with multiple regression model to identify factors that affect the decision of farmers to use high quality green bean seeds. Results showed that the area of agricultural land, the number of agricultural workers, the use of pesticide, and farming experience were significant factors in the decision of technology adoption. It can be concluded that the decision of technology adoption in farmers' household depend on social economic condition and the effectiveness of related institution. Appropriate policies should be formulated to take the advantage of technology adoption in application of high quality green bean seeds to improve agricultural productivity.

**Keywords:** adoption, technology, high quality, seeds, green beans

### INTRODUCTION

Green beans are cultivated crops, widely known in tropical regions which classified to leguminous pods. In Indonesia, green beans are the third important nuts group commodities after soybeans and peanuts that have many benefits for daily lives.

Green beans are the fifth important crops after rice, corn, soybeans and peanuts. In general, green beans grown in paddy fields after the rice harvest, when the predicted water is not enough anymore to suitable for planting rice or other crops. This condition is possible since the green beans known as a plant tolerant or resistant to drought (Sulistyo and Yuliasti, 2012).

The green beans have a wide range of benefits such as a food, for medicine and as animal feed ingredients, but it can be processed into a wide variety of food products. The green beans have the

potential to fill a shortage of protein and nutrition. There are quite good opportunity to develop the increasing of green beans production in Indonesia. The opportunities of developing green beans are: 1) the increasing demand for consumption and processing industry; 2) the availability of the land resources; 3) the gap in productivity (11,48ku / ha) and the potential outcome (15-24 ku/ ha); 4) the availability of new varieties and technology packages, as well as are quite skilled labor in the cultivation of green beans (The Directorate of cultivation of various beans and tubers, 2013).

Farmers have a very important role as the main actors in the efforts to achieve a successful green beans cultivation. Farmers who were able to adopt science and technology practices expected to have more ability to develop green beans farm business. Mariyono and Sumarno (2014) stated that there are six insignificant variables that influence

farmers' decision to adopt intensive chilly farming, they are: formal education, number of family members, wealth ranking, size of farm, number of plots, and agricultural training program. The insignificance of such variables means that they have no influence on farmers' decision making.

Mardikanto (1993) defines adoption as the behavior change process in the form of knowledge (cognitive), attitudes (affective) and skills (psychomotor) of a person after receiving the message delivered to the target market extension. Effect of adoption in business development is high, when farmers are able to adopt it then they will be able to apply knowledge, improve attitudes and improve skills in farm business development.

The research problems are:

1. How does the decision of technology adoption by farmers of green beans at the Central Java?
2. What are the factors that affect the adoption of technology in Central Java?

The objectives of the research are:

1. To explore the technology adoption decision by green bean farmers in Central Java.
2. To explore the factors that affect the adoption of technology by green beans farmers with high quality seed varieties in Central Java.

## METHOD

The study was conducted in the centre of green beans production in

Godong Grobogan, from March to April 2014. Survey was conducted in four villages selected purposively as the villages with the highest green bean production, namely: Werdoyo, Kopek, Dorolegi and Anggaswangi. Data were collected using questionnaires and interviews method with 80 green beans farmers as the respondents were selected by quota sampling. Data were analyzed with multiple regression model to identify the factors that influence the farmers' decision to adopt the technology of using high quality green beans' seed.

The regression equation is as followed:

$$Y = a + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + b_5x_5$$

with:

- Y = technology adoption scores
- X<sub>1</sub> = land area
- X<sub>2</sub> = number of labor
- X<sub>3</sub> = seeds (high quality and not)
- X<sub>4</sub> = amount of pesticide
- X<sub>5</sub> = farming experience

## RESULT AND DISCUSSION

The demographic condition of respondents is in Table 1. Table 1 shows that the respondents are green bean farmers in the district Godong Grobogan with more than 43% are 40 – 50 years old and almost 40 of them are 50 – 60 years old. Almost 44% respondents are finished with their elementary school level and around 30% are finished their high school level.

Table 1. Respondents' Demographic Condition (n = 80)

Description	Total	Percentage
<b>Age (year)</b>		
30 – 40	13	16.25
40 – 50	35	43.75
50 – 60	31	38.75
>61	1	1.25
<b>Level of education</b>		
Un schooling	2	2.50
Not finished elementary	15	18.75
Elementary	35	43.75
Junior high school	16	20.00
Senior high school	9	11.25
Graduate level	3	3.75
<b>Experience (year)</b>		
< 10	28	35.00
11 – 20	34	42.50
21 – 30	17	21.25
>31	1	1.25
<b>Main employment</b>		
Farmers	74	92.50
Village's administration employee	2	2.50
Entrepreneurship	2	2.50
Civil servant	2	2.50

Table 1 describes that only 3.75% of respondents had graduate level of education. More than 40% of green beans' farmers had 11 – 20 years of farming experience and almost 25% had more than 20 years of experience. More than 90% respondents work as farmers as their main employment.

Table 2 shows that the average production is 1,069 tonnes with an

average land area of 0.73 ha. The average use of green beans' seed for every 0.73 ha land area was 20.56 kg. The contribution of green bean production in Central Java to Indonesia in 2013 is 0.34% (70 951), while the contribution of Grobogan to Central Java is 0.36% (25542.36) and Godong to Grobogan is 0.26% (6641.01) (CBS, 2014).

Table 2. The Average of Land Area and Production of Green Beans

Description	Land Area (Ha)	Production	Seeds	Pesticide	Labor
Anggaswangi	0.87	1270.75	23.75	1.486	59.43
Werdayo	0.80	1168.75	22.95	1.284	64.25
Kopek	0.64	929.25	18.90	1.046	47.73
Dorolegi	0.62	911.00	16.65	0.934	50.37
Average	0.73	1069.94	20.56	1.188	55.45

Table 2 also explains that in technology adoption, almost 50% farmers were able to apply more than 2 technologies. This research found that technology adoption by farmers still not optimal. Farmers still did not use the high quality seed. Almost all of the respondents in this research were used green beans seed from the last previous harvest,

despite of the fact that green beans seeds with high yielding varieties can result in high productivity and provide great benefits (Cahyono, 2007). In order to increase the adoption rate, the synergistic role of agricultural extension worker is clearly needed. According to Pou et al. (2006), agricultural extension is aimed to farmers in especially about cultivation

technology to shape attitudes, skills and knowledge of farmers that are expected to support the farming activities.

Multiple regression model indicated that independent variables relatively explained the variation in farmers' decision. The multiple regression model was significant at 95 percent confidence level. There are four independent variables were significant influencing farmers' decision to adopt the technology of green bean seed varieties. They were agricultural land, the number of agricultural workers, the use of pesticides, and farming experience. Meanwhile, the number of seeds and harvesting were not significant to farmers' decision to adopt technology.

Regression equation of the model (with significant independent variables only) as followed:

$$Y = 1,93 + 2,87x_1 - 0,016x_2 - 0,08x_4 + 0,017x_5$$

Y = technology adoption scores

X<sub>1</sub> = land area

X<sub>2</sub> = number of labor

X<sub>4</sub> = amount of pesticide

X<sub>5</sub> = farming experience

Land area variable had a positive effect to farmers' decision to adopt technology of high quality green beans seeds. There is a tendency that the farmers with larger land area more likely to adopt a high quality green bean seeds. The number of agricultural labor had a significant influence to farmers' adoption in technology. The more labor the better the farmer able to manage, develop, and accept the adoption of technology.

The use of pesticides showed a significant result. Technology adoption is affected by how the use pesticide. Farmers will be able to adopt the technology when there is a reduction in pesticide use on green beans. The use of pesticide consider as more risky than the application of transgenic (Saragih et al, 2010) The variable of farming experience showed a significant result suggesting that farmers with more experience will be able to expand the horizons and aware of the technology. It can be concluded that

the ability of farmers to run green beans farming influenced by experience.

## CONCLUSION

This study showed that technology adoption influenced by land area, number of labor, amount of pesticide and farming experience. It can be concluded that the decision of technology adoption in households of farmers depends on the socio-economic conditions and the effectiveness of related agencies. The appropriate policy should be formulated to take advantage of the adoption of technology in the application of green beans superior quality to improve agricultural productivity.

## ACKNOWLEDGMENT

The author would like to say thank you for the funding from DIPA Faculty of Animal Science and Agriculture year of 2015.

## REFERENCES

- Badan Pusat Statistik. 2014. *Grobogan dalam angka*. Grobogan
- Badan Pusat Statistik. 2014. *Jawa Tengah dalam angka*. Semarang
- Cahyono, B. 2007. *Kacang Hijau. Teknik Budidaya dan Analisis Usaha Tani*. Semarang :Aneka Ilmu.
- Direktorat Budidaya Aneka Kacang dan Umbi. 2013. *Buletin Direktorat Budidaya Aneka Kacang dan Umbi Periode Bulan September 2012*. Kementerian Pertanian, Jakarta.
- Mardikanto, T. 1993. *Penyuluhan Pembangunan Pertanian*. Surakarta: UNS Press.
- Mariono, J., and Sumarno. 2015. Chilli production and adoption of chilli-based agribusiness in Indonesia. *Journal of Agribusiness in Developing and Emerging Economies* (5)1: 57 – 75.
- Pou, E., A. Gusasi, and A. Wahab. 2006. Tingkat adopsi inovasi petani terhadap teknologi budidaya jagung manis (*Zea mays saccharata sturt*) di

- Kelurahan Borongloe, Kecamatan bontomarannu, Kabupaten Gowa. *Agrisistem* 2 (2): 85 – 89.
- Saragih, E.S., S.R.P. Sitorus, Harianto, dan S. Moeljopawiro. 2010. Analisis regulasi dan kebijakan keamanan hayati dan peluang keberhasilan adopsi benih transgenik di Indonesia. *Jurnal AgroBiogen* 6(1): 40-48.
- Sulistyo, A. dan Yuliasti. 2012. Nilai duga heritabilitas galur-galur mutan kacang hijau (*Vigna Radiata*). *Prosiding Seminar Nasional Pangan 2012: Peran Teknologi untuk Mewujudkan Kedaulatan Pangan dan Peningkatan Perekonomian Bangsa*, UPN Veteran Yogyakarta, 1–14.

**DISCUSSION OF PARALLEL SESSION**

<b>PAPER TITTLE</b>	Technology Adoption of High Quality Greenbeans Seed By Farmers Household in Central Java
<b>AUTHOR</b>	Wiludjeng Roessali, Wahyu Dyah P, Tutik Dalmiyatun, Siswanto Imam S, Yudhit Restika Putri
<b>DISCUSSION</b>	
<b>QUESTION</b>	<ol style="list-style-type: none"> <li>1. The variable are not really socioeconomic factors?</li> <li>2. No table of suggestion result</li> <li>3. No clear indication of technology adoption</li> <li>4. Objection?</li> </ol>
<b>ANSWER</b>	<ol style="list-style-type: none"> <li>1. Education variable is in potent but not included in the model</li> <li>2. All variables are significant</li> </ol>
<b>SUGGESTION</b>	<ol style="list-style-type: none"> <li>1. Native check of English is needed</li> <li>2. Clear method of analysis needs to be formulated</li> <li>3. Table of regression result is needed</li> <li>4. Its need to explain clear indication of technology adoption</li> <li>5. If represent model then table of regression analysis need to be put in the paper</li> <li>6. Paper needs a proof reader</li> <li>7. No clear indications of adoption of technology</li> <li>8. If represent model then table of regression analysis need to be put in the paper</li> <li>9. Technology adoption is heavy influenced by the educational background, but it's not on the paper as the variable</li> <li>10. No clear formulation use in the paper</li> <li>11. The slides show they are 2 object in the paper but there's only 1 object in the paper, be consistent.</li> </ol>



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ISBN 978-602-7577-70-1



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