

e-Proceedings

2024
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**INTERNATIONAL
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ON ACCOUNTING
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Ethics and Integrity in Accounting and Business: Building Trust in an Intricate World

ORGANISED BY:

**FACULTY OF ACCOUNTANCY, UiTM PERAK BRANCH
TAPAH CAMPUS**

In Collaboration With

PROCEEDINGS OF THE 2ND INTERNATIONAL
CONFERENCE ON ACCOUNTING AND BUSINESS

(ICAB2024)

Ethics and Integrity in Accounting and Business: Building Trust in an Intricate World

e ISBN 978-967-2776-35-2

FACULTY OF ACCOUNTANCY
UNIVERSITI TEKNOLOGI MARA, PERAK BRANCH, TAPAH CAMPUS, MALAYSIA

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Perpustakaan Negara Malaysia

Cataloguing in Publication Data

No e-ISBN: 978-967-2776-35-2

Cover Design: Graphic Design and Web Page Team
Typesetting : ICAB 2024 Proceeding Team

Exploring the Impact of E-commerce Participation on Urban B40 Income in Malaysia

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Abstract

This study explores the impact of e-commerce participation on urban B40 income in Malaysia. Using purposive sampling, data from 252 urban B40 e-commerce entrepreneurs were collected via an online survey. Analysis using Wilcoxon signed-rank test indicates a significant increase in monthly household and individual incomes post-e-commerce participation, underscoring the positive economic impact on urban B40 group. This study provides crucial insights into how e-commerce could empower low-income urban communities and may alleviate urban poverty in Malaysia. It sheds light on the potential of e-commerce to uplift the economic status of marginalized groups. In addition, the insights garnered from this study may assist the policy makers to develop targeted interventions that can facilitate broader participation in e-commerce activities to encourage lower-income groups in urban areas to participate in e-commerce to enhance their standard of living.

Keywords

E-commerce, Income, Urban, B40, Malaysia, Poverty Alleviation

1.0 Introduction

The emergence of e-commerce as a dominant force in the global marketplace has significantly altered the landscape of retail and business, offering new avenues for economic growth and social inclusion. In Malaysia, where the digital economy is rapidly expanding, e-commerce presents both opportunities and challenges, particularly for the urban B40 population—the bottom 40% of households by income. This demographic, often characterized by limited access to traditional economic resources, stands to benefit immensely from the inclusive potential of e-commerce to increase their income. The enhancement of income can be achieved through increased participation in e-commerce that will lead to poverty alleviation such as an increase in medical expenses, education expenses, household savings, household expenses, household assets, and employment opportunities.

The Ministry of Economy (2023) reported that relative poverty in Malaysia is relatively high, standing at 16.6% in 2022. Among the states, Johore had the highest rate at 15.9%, Penang at 15.3%, Selangor at 14.2%, and Malacca at 13.2%. Notably, Penang, Selangor, Malacca, and Johore which are urban states in Malaysia, recorded high relative poverty rates. The data underscores a worrying trend of increasing relative poverty across these states, as Siddique et al., (2022) emphasize that poverty may impact human health. Financial constraints may hinder access to health insurance and necessary medical procedures, while

limited access to nutritious foods and increased violence can influence health behaviors and contribute to stress (Khullar and Chokshi, 2018).

To address poverty issues in urban areas, the Malaysian government indeed introduced the Urban Poverty Eradication Program (PPKB). This program aims to alleviate the burden on poor urban families, enhance their capabilities and quality of life, and promote community well-being. In relation to this, governments in four urban states in Malaysia namely Selangor, Penang, Malacca, and Johore have introduced various initiatives to encourage participation in e-commerce to improve the income of lower income households in their states.

In relation to this, existing academic studies have concluded that participation in e-commerce enables individuals to increase their income and indirectly alleviate poverty (Luo and Niu, 2019; Huang et al., 2020; Lin et al., 2021; Chao et al., 2021; Xu et al., 2022; and Yin and Choi, 2022). However, the existing literature predominantly focuses on farmers in rural areas in China. The extent to which e-commerce participation can improve income and eventually reduce poverty in urban areas in Malaysia, particularly in states like Penang, Selangor, Malacca, and Johore, remains unclear. Hence, this study explores whether participation in e-commerce influences income levels among urban B40 groups in Malaysia.

2.0 Literature Review and Hypothesis Development

Existing literature highlights the positive impact of e-commerce on income growth, particularly in rural areas in China (Luo and Niu, 2019; Huang et al., 2020). The studies emphasize the inclusive nature of e-commerce benefits, with potential for higher income growth among poor populations (Luo and Niu, 2019). The transformative potential of e-commerce in addressing poverty and contributing to local economic development has been consistently underscored (Huang et al., 2020).

Furthermore, the findings of Huang et al., (2020) indicate not only an increase in family income but also additional spending on education, suggesting a holistic improvement in socio-economic aspects. The research by Lin et al., (2021) emphasizes the critical role of rural e-commerce in poverty alleviation, highlighting its targeted and effective nature. Chao et al., (2021) contribute valuable evidence supporting the positive impact of e-commerce on village income, particularly in poor areas.

Moreover, Xu et al., (2022) stress the direct impact of e-commerce in connecting impoverished farmers to larger online markets, promoting their goods, and facilitating rural industrial development. Yin and Choi (2022) further support the transformative capacity of e-commerce, particularly in reducing income disparities between rural and urban areas.

Additionally, the findings from studies by Liu et al., (2023) and Zheng et al., (2024) highlight the capacity of rural e-commerce to increase income. Furthermore, Li and He (2024) examine the influence of rural e-commerce on farmers' revenue and the finding stress that e-commerce initiatives can enhance revenue for farmers and promote rural development. Based on the findings from earlier studies, the following hypothesis has been developed:

H1: Participation in e-commerce will enhance the household income of urban B40 in Malaysia

3.0 Methods

3.1 Sample

This study employs a purposive sampling approach, strategically selecting participants based on specific criteria. The selection criteria include entrepreneurs falling within the B40 income group, residing in Penang, Selangor, Malacca, and Johore, and actively involved in e-commerce activities, such as selling products or services online. In July 2020, The Department of Statistics Malaysia (DOSM) outlined the income ranges of B40 group in Malaysia:

B1	< RM2,500
B2	RM2,501 - RM3,169
B3	RM3,170 - RM3,969
B4	RM3,970 - RM4,849

In this regard, Malaysian households residing in Penang, Selangor, Malacca, and Johore with a monthly household income of RM4,849 and below are considered as part of the B40 category.

3.2 Data Collection

Primary data was employed, where questionnaires in the form of LimeSurvey, were distributed physically and electronically targeting B40 households involved in businesses in Penang, Selangor, Malacca, and Johore. The respondents were identified through their participation in online business, with their business information, such as email and phone number, collected from their e-commerce or online business page. The questionnaires aimed to collect information on respondents' demographic characteristics and their income before and after e-commerce participation. All research was carried out in accordance with the protocol approved by the Universiti Utara Malaysia's Review Board. After receiving approval from the Research Ethics Committee at Universiti Utara Malaysia, the questionnaires were distributed.

Before disseminating the finalized questionnaire, a pilot test was conducted from 1st April 2022 to 31st May 2022, where a total of 45 respondents have answered the survey. Cronbach's Alpha analysis was employed to test the reliability (internal consistency) of the items proposed, and the results showed no reliability alpha was below the threshold point of 0.60, demonstrating internal consistency. Two versions of the questionnaire, English and Malay, were made available to the respondents.

The finalized questionnaires were distributed from 5 July 2022 until 31 August 2023 to more than 2000 respondents via electronic platform such as Shopee, Lazada, Instagram, Facebook, and e-mail. A total of 422 respondents had answered the questionnaires and only 252 fulfilled the criteria of urban B40 participating in e-commerce. All responses were kept confidential, and no personally identifiable information was disclosed. After all questionnaires were collected, the data were manually entered into SPSS for descriptive analysis, and Wilcoxon signed-rank test analysis.

3.3 Technique of Analysis

To examine the impact of e-commerce participation on household income among B40 entrepreneurs in Penang, Selangor, Malacca, and Johore, a Wilcoxon signed-rank test was employed. Since the income data before and after participating in e-commerce are ordinal, Wilcoxon is appropriate to use because it assumes

the non-normality of the data. In relation to this, the Wilcoxon signed-rank test is used to test the following hypothesis:

$$H_0: \text{Median Income}_{\text{after}} = \text{Median Income}_{\text{before}}$$

$$H_1: \text{Median Income}_{\text{after}} > \text{Median Income}_{\text{before}}$$

Prior to conducting the Wilcoxon signed-rank test, the income data range is coded into categories, as illustrated in Table 1.

Table 1: Income Range and Category

Income Range	Category
B1 (RM2,500 Below)	1
B2 (RM2,501 – RM3,170)	2
B3 (RM3,171 – RM3,970)	3
B4 (RM3,971 – RM4,850)	4
M1 (RM4,851 – RM5,880)	5
M2 (RM5,881 – RM7,100)	6
M3 (RM7,101 – RM8,700)	7
M4 (RM8,701 – RM10,970)	8
T1 (RM10,971 – RM15,040)	9
T2 (More than RM15,041)	10

4.0 Results and Discussion

4.1 Descriptive analysis

A descriptive analysis was conducted where Table 2 presents the demographic profiles of 252 respondents. Notably, a significant proportion of those involved in e-commerce were females, constituting 161 respondents (45.74%), whereas males accounted for 91 respondents (25.85%). It is evident that the majority of e-commerce participants fell within the age range of 30 to 39 years, with 107 individuals (30.39%), followed closely by those aged 19 to 29 years, numbering 92 individuals (26.14%). Furthermore, a substantial proportion of e-commerce participants were married individuals, with 144 respondents (40.91%) out of the total 352 respondents categorized under the B40 income group. In terms of ethnic background, Malays were the predominant group among e-commerce participants, with 210 respondents (59.69%) identifying as Malay. An interesting observation is that a significant number of e-commerce participants possessed higher educational qualifications, with 93 individuals (26.42%) holding a degree, 58 individuals (16.48%) having a diploma, and 34 individuals (9.69%) obtaining a master's degree.

In terms of employment status, self-employment was the predominant category among e-commerce participants, encompassing 107 respondents (30.40%), followed by employment in the private sector, which comprised 66 individuals (18.75%). Monthly household income witnessed a substantial increase post-e-commerce engagement. For instance, before e-commerce involvement, 144 households (40.91%) were categorized under income level B1, but after participation, only 49 households (13.92%) remained in this category. Lastly, it is worth highlighting that a significant proportion of e-commerce participants are coming from the state of Selangor, constituting 130 individuals (36.93%) out of the total respondents.

Table 2: Descriptive Analysis of Respondents

Gender	Frequency		Percentage (%)	
Male	91		25.85	
Female	161		45.74	
Total	252		100	
Age				
18 and below	3		0.85	
19-29	92		26.14	
30-39	107		30.39	
40-49	42		11.93	
50-59	7		1.99	
60 and above	1		0.28	
Total	252		100	
Marital Status				
Single	97		27.56	
Married	144		40.91	
Divorce/Single Parents	11		3.12	
Total	252		100	
Race				
Malay	210		59.69	
Chinese	31		8.81	
Indian	5		1.42	
Other	6		1.70	
Total	252		100	
Education				
SPM	32		9.09	
STPM/Matriculation/Foundation	19		5.40	
Diploma	58		16.48	
Degree	93		26.42	
Master	34		9.69	
PhD	13		3.70	
Other	3		0.85	
Total	252		100	
Employment				
Self-employment	107		30.40	
Government Sector	23		6.53	
Private Sector	66		18.75	
Full-time Student	26		7.39	
Housewife	23		6.53	
Unemployment	6		1.70	
Retiree	1		0.28	
Total	252		100	
Monthly Household Income				
	Before	After	Before	After
B1	144	49	40.91	13.92
B2	26	65	7.39	18.47
B3	68	25	19.32	7.10
B4	14	76	3.98	21.59
M1		18		5.11
M2		7		1.99
M3		2		0.57
M4		6		1.70
T1		3		0.85

T2		1		0.28
Total	252	252	100	100
Residency				
Johore		52		14.77
Malacca		15		4.26
Selangor		130		36.93
Penang		55		15.63
Total	252		100	

4.2 Wilcoxon Signed-Rank Test

Table 3: Wilcoxon Signed-Rank Test

Wilcoxon Signed-Rank Test			H ₀ : Median Income _{after} = Median Income _{before} H ₁ : Median Income _{after} > Median Income _{before}		
Variable	N	Median Before	Median After	Median Change	<i>p</i> -value for difference in medians
Monthly Household Income (MHI)	252	1.00	3.00	2.00	0.001***
Monthly Individual Income (MII)	252	1.00	2.00	1.00	0.001***

*** represent significance at 1%, by two-tailed tests.

The results of Wilcoxon signed-rank test in Table 3 show that the median differences of MHI and MII before and after participating in e-commerce are statistically significant (p -value = 0.001), affirming the evidence of participation in e-commerce could enhance the income of urban B40. The result is in line with the findings of Luo and Niu (2019), Huang et al. (2020), Lin et al. (2021), Chao et al. (2021), Liu et al. (2023), Zheng et al. (2024), and Li and He (2024). The findings imply that the increase in income categories among the urban B40 suggests a significant improvement in their livelihoods, indicating that participation in e-commerce has provided them with enhanced financial stability and opportunities for economic growth. However, the findings should be interpreted with caution, as further analysis is needed to confirm the results.

5.0 Conclusion

This study delves into the impact of e-commerce participation on the income of urban B40 in Malaysia. The finding reveals a positive impact of e-commerce participation on household income among urban B40 in Malaysia, with a notable shift towards higher income categories after engaging in e-commerce. This suggests the potential of e-commerce initiatives to uplift economic conditions and improve livelihoods within this demographic.

Additionally, the descriptive analysis sheds light on the demographic characteristics of B40 entrepreneurs involved in e-commerce, indicating a notable presence of female entrepreneurs, and those within the 30-39 age group. The high proportion of respondents having tertiary education suggests a correlation between higher education levels and engagement in e-commerce activities. These demographic insights provide valuable context for understanding the profile of B40 entrepreneurs in the e-commerce sector and offer implications for targeted policy interventions and support programs aimed at fostering inclusive economic growth and digital inclusion among marginalized communities in Malaysia.

In addition, the Malaysian government may increase awareness and education campaigns to highlight the benefits of e-commerce participation and educate B40 entrepreneurs about available resources and support services, aiming to dispel misconceptions and build confidence in embracing e-commerce opportunities. Partnerships with established e-commerce platforms can provide B40 entrepreneurs with access to wider markets and technical support, necessitating collaborations between government agencies, non-profit organizations, and e-commerce platforms to ensure equitable opportunities for B40 entrepreneurs to thrive in the digital economy.

Although the study has achieved its set objective, it is not without its limitation due to factors beyond the researcher's control and capabilities during the study. The limitation includes concerns regarding the accuracy and reliability of the data and information provided by respondents. This is due to the subjective nature of self-reported data and potential biases, there may be inconsistencies or inaccuracies in the information collected during the study. For future studies, research could focus on the rural context, exploring the dynamics of e-commerce participation among rural entrepreneurs. This would provide valuable insights into the unique challenges and opportunities they face when engaging with e-commerce platforms

Acknowledgement

This research was supported by Ministry of Higher Education (MoHE) of Malaysia through Fundamental Research Grant Scheme (FRGS/1/2021/SSO/UUM/02/11).

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Surat kami : 700-KPK (PRP.UP.1/20/1)
Tarikh : 20 Januari 2023



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Kelulusan daripada pihak tuan dalam perkara ini amat dihargai.

Sekian, terima kasih.

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Saya yang menjalankan amanah,

SITI BASRIYAH SHAIK BAHARUDIN
Timbalan Ketua Pustakawan

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Setuju.

27.1.2023

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