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## Working Paper

# Entrepreneurship training and online marketplace participation among female persons with disabilities

ADB Working Paper, No. 1342

### Provided in Cooperation with:

Asian Development Bank Institute (ADBI), Tokyo

*Suggested Citation:* Siew Wei Gan; Vengadeshvaran Sarma; Yu Hoe Tang; Siew Chen Sim (2022) : Entrepreneurship training and online marketplace participation among female persons with disabilities, ADB Working Paper, No. 1342, Asian Development Bank Institute (ADBI), Tokyo,  
<https://doi.org/10.56506/JNOT2052>

This Version is available at:

<https://hdl.handle.net/10419/272885>

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**ADBI Working Paper Series**

**ENTREPRENEURSHIP TRAINING  
AND ONLINE MARKETPLACE  
PARTICIPATION AMONG FEMALE  
PERSONS WITH DISABILITIES**

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No. 1342  
October 2022

**Asian Development Bank Institute**

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Suggested citation:

Gan, S. W., V. Sarma, Y. H. Tang, and S. C. Sim. 2022. Entrepreneurship Training and Online Marketplace Participation among Female Persons with Disabilities. ADBI Working Paper 1342. Tokyo: Asian Development Bank Institute. Available: <https://doi.org/10.56506/JNOT2052>

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**Abstract**

Online marketplace participation is a strategy for reducing barriers for female entrepreneurs who qualify as persons with disabilities (PWDs). Adapting a framework focused on causal interaction, entrepreneurial action, and the sociocultural context, we analyzed data using a mixed-methods approach from an entrepreneurial training program aimed at PWDs and implemented in three Southeast Asian nations, namely Indonesia, Malaysia, and the Philippines, to evaluate whether online marketplace participation helps female PWDs generate better income and support their families. Findings indicate that female PWD entrepreneurs who participate in the online marketplace generate better earnings than those who do not, although heterogeneities by nature of the product/service in question are prevalent. The results also show that trainees are better able to meet their families' financial needs. Despite the advantages, online marketplace participation among female PWD entrepreneurs is still low due to constraints regarding capital, technical know-how, and suitability of products. Hence, targeted intervention is necessary to enhance their participation.

**Keywords:** entrepreneurship, PWDs, online marketplace, training

**JEL Classification:** I31, L26, O17

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# 1. INTRODUCTION

Over the last few decades, the GDP growth of Southeast Asian nations has surpassed the average growth in emerging and developing economies, as well as the global average (International Monetary Fund 2018). Entrepreneurship is said to be the driving force of economic growth (Anokhin, Grisrich and Hisrich 2008), but gender gaps in entrepreneurship persist (Elam et al. 2019). Entrepreneurship activities refer to those associated with the creation of new ventures (Doran, McCarthy, and O'Connor 2018). However, PWDs are unable to participate meaningfully in the mainstream economy due to significant challenges as employees (Ng, Abdullah, and Mey 2011) and entrepreneurs (Dhar and Farzana 2017) in lower- and middle-income countries. Stigmatization, mobility limitations, financial constraints, and a lack of access to social and economic infrastructure and services are some of the challenges faced by PWD entrepreneurs (Wumbei Ibrahim, and Alhassan 2017). These are amplified for female PWD entrepreneurs in particular due to additional challenges associated with gender roles.

Although self-employment among women in Southeast Asia is common, female-owned businesses are generally of lower quality (OECD 2017). They lag behind in terms of size and productivity, and tend to be less profitable, with little potential for expansion. They are also less resilient to adverse economic shocks and have a lower market survival rate. Significant female participation in the informal economy also contributes to increasing economic inequalities, worsening the position of the most vulnerable women (OECD 2017).

Instead of viewing disabilities as a weakness, disability should be recognized as a part of human culture, and society should ensure that the basic rights of all people are protected through supportive structures, procedures, and infrastructures that minimize barriers for those with disabilities (Talib, Sunar, and Mohamed 2019). However, the current reality is that institutional voids such as the lack of supportive policies, infrastructure, culture, and norms are key factors that hinder female entrepreneurship (McAdam, Crowley, and Harrison 2019), particularly in emerging economies, because female entrepreneurs generally experience inherent gendered social expectations. The challenges they face include the legitimacy of being an entrepreneur due to social norms associating it with masculinity (McAdam, Crowley, and Harrison 2019), and how females and males should behave (Díaz-García et al. 2016) where women are expected to carry out the bulk of unpaid work to care for children, as well as elderly and disabled family members, and receive less education due to an emphasis on the education of sons (OECD 2017).

Limited access to initial capital and investment credit has been identified as one of the key factors that severely hamper the potential of female entrepreneurs to start or develop their business (OECD 2017). Differential inheritance rights regulated by religious laws in favor of men that affect the majority of the population in Indonesia and Malaysia, and a minority of the population in the Philippines (World Bank 2012), make it more difficult for women to own assets (OECD 2017) that can be used for their business. Against this background, it is difficult for female entrepreneurs to start their own businesses—more so for female PWD entrepreneurs, who are a marginalized group. Due to their differently abled physical and mental abilities, there are often higher rates of poverty with deprivations in multiple dimensions.

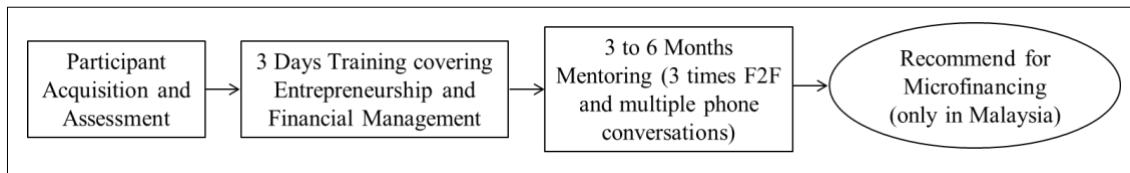
However, recent evidence shows that the success of female entrepreneurship among rural women is attributable to advancement in technology and online marketplaces—which facilitate transactions that would otherwise not have occurred, enabling easier entry of small sellers (Luca 2017) like female PWD entrepreneurs. Moreover, the empowerment of female PWDs through targeted and inclusive entrepreneurship training has been identified as an effective means of business creation, leading to economic development and poverty alleviation as they are more likely to become necessity entrepreneurs (Paul and Sarma 2013). Furthermore, to address the current employment gaps and realize Goal 8 of the UN Sustainable Development Goals for persons with disabilities—promoting full and productive employment and decent work—it was recommended that mainstream entrepreneurship development training and microfinance systems include persons with disabilities (UN 2018).

In view of the above, and in acknowledging the mutually intertwined connection between institutional voids and the entrepreneurial ecosystem, this study uses McAdam, Crowley, and Harrison's (2019) micro-, meso-, macro-level institutional framework to understand the interactive relationships across all these dimensions and their influence on women's entrepreneurial propensity.

## **1.1 R.I.S.E. Program**

This study evaluates the social and economic benefits of digital entrepreneurship among women PWD trainees who attended the “Reach Independence and Sustainable Entrepreneurship” (R.I.S.E.) program across three countries: Indonesia, Malaysia, and the Philippines. Trainees for the program were recruited with reference to lists obtained from recognized nongovernmental organizations (NGOs) and governmental bodies that support PWDs. PWDs in the program had some form of physical disability, while those with hearing or visual impairment could attend if accompanied by a family member or caretaker. However, PWDs with mental or learning disabilities were not selected to participate in the program. Training sessions were conducted in key cities and towns throughout the respective countries with a transport allowance provided to enable trainees to travel from their home to PWD-friendly training venues in the city or town.

The program is funded by the Maybank Foundation and implemented by a regional social enterprise, People Systems Consultancy (PSC), and consists of three days of training followed by three to six months of mentoring as shown in Figure 1. The first day of the training is aimed at improving trainees' self-confidence, with a focus on awareness and change, followed by a re-evaluation of their business ideas and customers. The second day covers topics such as business strategies, value chain analysis, marketing, and sales. In the sales strategies module, trainees are trained to use social media platforms (such as Facebook and Instagram) to market their products. On the last day, trainees are introduced to topics in financial management covering the separation of business and personal finances, bookkeeping, working capital management, savings, and reinvestment of profits. Details of the training topics can be found in Appendix A. Mentoring sessions focused on supporting trainees in applying the concepts learned during the training to help increase their sales and ultimately their income. Although there were no requirements for trainees in the program to have access to the internet as the training was conducted face to face, the mentors would set up social media groups to facilitate the mentoring process and to encourage trainees from each batch to share their entrepreneurial journey with each other.

**Figure 1: Overview of R.I.S.E. Program**

## 2. LITERATURE REVIEW

### 2.1 Institutional Voids

Institutional voids refer to the absence of formal market-based institutions that are essential to serve firms and allow them to thrive, which in turn hampers market interactions, increases transaction costs, and causes economic inefficiency (Khanna and Palepu 2010). Small businesses like those owned by female PWDs suffer from weak institutional environments such as unreliable sources of market information, limited access to financial capital, widespread corruption, an uncertain regulatory environment, infrastructure deficiencies, an inefficient judicial system, and a strict bureaucratic process hampering efforts to establish and enhance business transactions, which are particularly persistent in emerging markets (McAdam, Crowley and Harrison 2019). Today, there are persistent gender gaps in gaining access to digital and financial infrastructure that continue to exclude women, particularly those from marginalized groups (UN Women 2021).

As well as formal market-based institutional voids, female entrepreneurs also suffer from informal and nonmarket institutional voids such as the legitimacy of women entrepreneurship (McAdam, Crowley, and Harrison 2019), severe underrepresentation of women in leadership and politics (UN Women 2021), and gendered social expectations (Díaz-García et al. 2016). On the other hand, some studies suggest that the informal connections based on personal and kinship ties within informal institutions counterbalance the “voids” in the formal institutional system, thereby supporting entrepreneurial activities (Pruthi and Wright 2017).

Literature has examined the broad range and nature of institutional voids and their impacts in several settings. Some of these include access to investment capital (Harrison et al. 2018), the growth and performance of new and small ventures (Bruton, Su, and Filatotchev 2018), and government intervention in gaining access to finance (Armanios et al. 2017). Most of these studies use governance indicators as measures of institutional voids with very little focus on the impact of institutional voids on female PWD entrepreneurship income through the lens of online marketplace participation. Pertinent to developing countries, resource and opportunity accessibility requires a well-functioning social and cultural framework (McAdam, Crowley, and Harrison 2019) at the macro level. An unsupportive cultural context imposes informal sanctions for women entrepreneurs who are perceived as deviating from normal behavior (Ahlstrom and Bruton 2002).

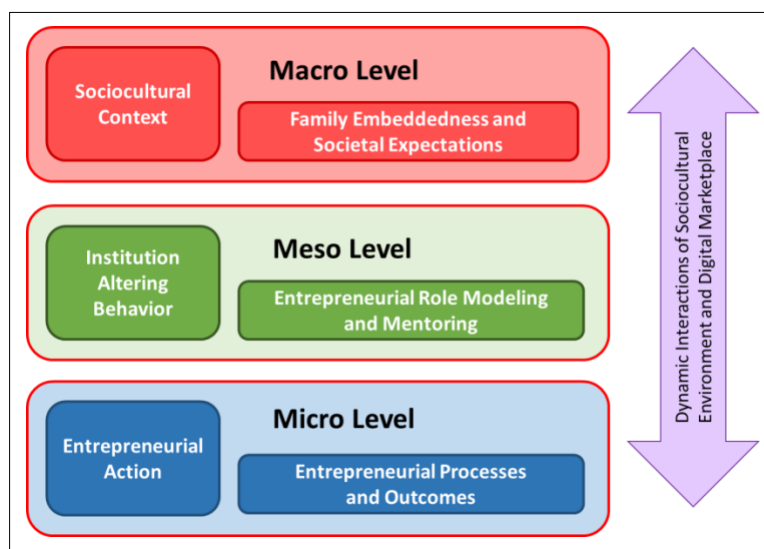
Although female entrepreneurs face tremendous challenges, they invariably influence and are influenced by their entrepreneurial activities within the sphere of their sociocultural context (McAdam, Crowley, and Harrison 2019). According to Kim, Wennberg, and Croidieu (2016), meso (middle)-level mechanisms are important as they can act as the intermediary connecting macro- and micro-level elements. Institutional altering behavior through individual or organizational efforts such as the establishment and work of PSC in the context of this study can help to close these



institutional gaps. This can occur when social groups such as female PWD entrepreneurs are brought together by an entrepreneurial agency, and trained and mentored by trainers/mentors, which in turn generates informal institutions that are responsible for the strong influence on individual entrepreneurial achievements. The voluntary membership of the groups provides people with opportunities to build relationships and trust with other like-minded individuals, leading to conditions that facilitate reciprocity and positive emotions (Kim, Wennberg, and Croidieu 2016). Ultimately, members benefit from the shared intentions and overlapping networks among group members, which eventually facilitate introductions to external resource providers. We argue that this helps to overcome the formal and informal institutional voids that are unfavorable to female PWD entrepreneurs at the meso level.

Understandably, entrepreneurship is often influenced by the larger entrepreneurial ecosystem, but it is important that entrepreneurs themselves play a central role in the creation of the system and in keeping the system healthy (Stam and Spigel 2017). Individual female PWD entrepreneurs can choose to abide by, evade, or alter the institutional constraints (McAdam, Crowley, and Harrison 2019). With online marketplace participation enhancing the empowerment of female PWD entrepreneurs, the outcomes of their entrepreneurial actions can contribute to altering the de facto effect of institutions such as income disparity compared to their male counterparts at the micro level. Hence, McAdam, Crowley, and Harrison’s (2019) micro-, meso-, macro-level institutional framework (Figure 2) is adapted for this study.

**Figure 2: Entrepreneurship and Digital Marketplace in the Sociocultural Context of Female PWD Entrepreneurs**



## 2.2 Entrepreneurship, Digital Technologies, and Female PWDs

Although ASEAN has made a huge leap forward in addressing institutional voids in recent years, the Southeast Asia region is generally characterized by a consistent gender income gap. The World Economic Forum 2021 Global Gender Gap Index ranked the gender pay gap in Malaysia in 112th place, that of the Philippines in 17th, and that of Indonesia in 101st (WEF 2021), indicating a significant disparity in income between men and women. Specifically, the labor force participation of women is approximately 56%, compared to 79% for men. About 67% of employed women

work in the informal sector, while 3% are employed yet live below the poverty line (ASEAN Gender Outlook 2021). In the same report, it was pointed out that women with disabilities are disadvantaged when it comes to SDG progress because of their personal characteristics. Countries like Timor-Leste, Cambodia, Malaysia, and Indonesia require more effort to empower women and attain gender equality in positions of leadership, ownership of economic assets, and financial independence (UNESCAP 2017).

Male and female entrepreneurs have different work–family commitments, resulting in differential benefits from digital technologies, which are greater for women entrepreneurs (Pergelova et al. 2019), and more so among those who are married. The versatility of digital technologies can compensate for institutional voids, and the lack of resources such as time and scale, while enabling women PWD entrepreneurs to overcome the difficulty of marketing their products in physical marketplaces, social stigma, and their own low self-esteem.

In the context of this study, participating in the online marketplace is defined as participation in a network of interactions and relationships in which information, products, services, and payments are exchanged (Ittaqullah, Madjid, and Suleman 2020). Both digital technologies and the internet, when used together, can aid small businesses owned by women PWD entrepreneurs in identifying new customers and distributors (Rosenbaum 2017), while protecting their privacy, including their physical disability, hence allowing them a more equal opportunity to compete like any other entrepreneur. This is important for creating, growing, and sustaining their business, increasing their income, and even internationalizing their business.

In contrast, Duffy and Pruchniewska (2017) argue that gender is a marked category in the online environment and will still result in pressure on women to develop an online personality that conforms to feminine stereotypes. This view contradicts arguments about digital entrepreneurship being a “great leveler” for emancipating marginalized groups traditionally underrepresented in entrepreneurship and business ownership (Martin and Wright 2005), such as female PWD entrepreneurs. In the same vein, Dy, Martin, and Marlow (2018) posit that the benefits of digital technology in facilitating entrepreneurship for marginalized groups may be overstated in that digital entrepreneurship remains a resource-based activity, requiring capital investment, technical knowledge, access to online marketplaces, and supporting hardware and software. Daniels (2009) concurs that offline inequalities in terms of resource access are likely to be reflected in the online environment.

Given the above, this study attempts to answer two main research questions:

1. Do female PWD entrepreneurs who participate in the R.I.S.E. program do better in the online marketplace?
2. Are female PWD digital entrepreneurs better able to support themselves and their families?

### **3. METHODOLOGY**

#### **3.1 Mixed Methods**

In view of the perspective and requirements of analysis based on McAdam, Crowley, and Harrison’s (2019) multidimensional institutional framework, and the interdisciplinary study linking entrepreneurship, development, training, and social and cultural realities within the context of PWDs, the use of different research methods helps create a

multidimensional picture and provides a richer understanding of the research problem (Ngwenyama and Lee 1997). This research combines a qualitative case study through formal semi-structured interviews with quantitative data collected at the point of training and mentoring. We elaborate on these two data sources below.

### 3.2 Quantitative Data

With permission from the training providers and the project sponsor, we were given access to participant data collected by PSC in all four countries (Indonesia, the Lao People’s Democratic Republic [Lao PDR], Malaysia, and the Philippines) where the R.I.S.E. training program was conducted. Data from the Lao PDR were excluded from our analysis because the program in the Lao PDR was in a pilot phase (pre-Covid-19) and the population of trainees is small (~200). There were 1,996 female trainees (and 2,571 male trainees)—we use data on all female trainees in our analysis. Data were collected from trainees prior to the training and again three months after it. Table 1 presents the proportion of digital entrepreneurs by country.

**Table 1: Proportion of Digital Entrepreneurs by Country**

Country	Trainees	Distribution	Online Marketplace	Proportion of Trainees
Malaysia	469	23%	30	6%
Indonesia	836	42%	118	14%
The Philippines	691	35%	32	5%
Total	1,996	100%	180	9%

Our main quantitative data analysis relies on an ordinary least squares (OLS) estimation using the sample of all female trainees from the three countries. We include the following covariates in our estimation: country, location within country, training batch, and business category.

### 3.3 Qualitative Data

Interviewees who were female PWD entrepreneurs conducting business online were identified from data received from PSC. We also reached out to mentors from PSC to identify trainees who had conducted both physical and online businesses as potential respondents. We arranged for native speakers to interview the trainees shortlisted. Forty-four semi-structured formal interviews of between 30 and 50 minutes in length were conducted online with entrepreneurs from Malaysia, Indonesia, and the Philippines in August 2021. Questions were asked regarding their entrepreneurial background prior to the R.I.S.E. training, their experience with the digital marketplace, and its impact on their business. The recorded interviews were then transcribed and translated for analysis. Coding was conducted by two researchers independently before being combined for analysis. We used directed content analysis (Hsieh and Shannon 2005) based on our research questions with the following themes: reasons and challenges for conducting online business; the impact of the training and mentoring program; and the impact of the Covid-19 pandemic. A breakdown of the interview respondents by country can be found in Table 2 below.

**Table 2: Breakdown of Interview Respondents by Country**

Countries	Malaysia	Indonesia	The Philippines	Total
No. of Interviewees	14	16	14	44
Digital Entrepreneurs	14	14	10	38
Bricks and Mortar	0	2	4	6

## 4. FINDINGS

In order to address our two main research questions, we contextualize our findings to McAdam, Crowley, and Harrison's (2019) framework.

### 4.1 Macro Level

Institutional voids at the macro level include the lack of access to financial capital. Female PWD entrepreneurs often lack the capital to start or grow their business. They face sociocultural barriers to obtaining capital, as highlighted by ID27, who lamented that "most banks do not believe in us, people with disabilities." ID39 said that some of her friends who come from underprivileged families do not have any funds to start a business despite having the motivation to do so after the R.I.S.E training. Nevertheless, several trainees highlighted that they have learned through the training that they can save up their limited income to grow their business, as exemplified by PH21, who said: "With the little capital I have, I can make it grow."

For those in business, they had chosen to conduct or expand their business online due to the fewer barriers to entry and the lower cost of capital. The online marketplace widens the scope of their market and opportunities. This is particularly important for female PWD entrepreneurs, who face limitations in their mobility and have household responsibilities. ID20 said: "Because of my disabilities and my responsibility as a homemaker, it is easier to handle everything from home without having to move around much." ID27, for example, started using delivery apps such as Grab and Gojek, and found that orders and deliveries have become easier.

Throughout the Covid-19 pandemic, most interviewees experienced a severe reduction in their revenue as they were unable to operate their physical shops. To overcome these restrictions, many interviewees increased their online presence out of necessity, particularly through online delivery services. MY09 added more products for her online business while MY15 said: "Since the lockdown, about 80% of my products are now marketed online."

### 4.2 Meso Level

At the Meso level, institutional interventions (such as the R.I.S.E. program) and widening access to the online marketplace provide important avenues for female entrepreneurs with disabilities to expand their offering and mitigate adverse effects such as those caused by the Covid-19 pandemic. Hence, we first set out to understand if there are differences in income after joining the R.I.S.E program and also between entrepreneurs who only have an offline presence versus those who also have an online presence. We perform t-tests on the change in log of income. We use the natural logarithm to standardize the various currencies used across the three countries.

Our first t-test on incomes prior to and after attending the R.I.S.E program indicates that female PWD entrepreneurs, on average, experienced a 12.1% increase in their income within the first three months. This is statistically significant at the 0.1% level. The t-test using online marketplace participation suggests that female PWD entrepreneurs who participate in the online marketplace received an income approximately 24% higher than female PWD entrepreneurs without a digital presence (this effect is significant at the 5% level).

We also investigated how the R.I.S.E training program as a meso-level intervention helped propel trainees to a higher level of income. The main benefits of the program include renewed confidence and motivation (MY06, ID25, and PH25), new ideas and the boldness to promote their products to potential customers (MY04 and PH03), and a higher sales volume while reducing operational costs (MY11, ID35, and PH12). One of the areas that many interviewees found important in the training is a mindset change, which helped them to overcome negative feelings they have such as fear, shyness, and a lack of self-confidence as reported by ID45, who said: "I was taught to turn a negative mindset into a positive one." The R.I.S.E. training and mentoring program also provided interviewees with the motivation to expand their business through the online marketplace. Prior to the R.I.S.E. program, less than half of the interviewees conducted business online. Three quarters of the interviewed trainees said that since the training, they have used some form of mobile commerce (m-commerce) platform to boost their business. MY09 commented: "Before the R.I.S.E. program, I had no knowledge of what online business is or how to do it. After (R.I.S.E.), I tried venturing into online business with my handicraft works."

During the training, they learned to promote their product through social media platforms such as Facebook and Instagram. These M-commerce platforms provide low-cost avenues for interviewees to access the online marketplace. MY02 stated that she started using Instagram after participating in the R.I.S.E. program, while others, like MY08, began to advertise their product through Facebook Pages. One enterprising interviewee in Indonesia reported that she has a website, and she (ID18) has a business overseas exporting handicrafts to Singapore, Australia, and Canada. Overall, almost all the interviewees consider the online marketplace to be supplementary to their physical outlets and not the main avenue for transactions.

Nevertheless, despite being in business for at least two years, many trainees were reluctant to conduct their business through the online marketplace. The lack of technical know-how is one of the main deterrents. Many of the interviewees admitted that those living in the rural area have "little knowledge concerning online matters. We do not know how to upload information about our products on online platforms" (MY09). The second most common reason is the suitability of products for online sale, as most of the interviewees were involved in the food and beverage (F&B) sector, where the perishability of products was a concern. ID04 revealed that she had considered doing business online, but the product she sells is not suitable for "intercity orders, which might take two to three days for delivery." Third, there is greater competition for those in the F&B segment online as there are many competitors selling similar products online. MY11 commented that profit from selling food products online is low as there are those "selling the same products on Facebook and, when coupled with price competition, it makes the situation more difficult."

### 4.3 Micro Level

Evidence in the previous subsection indicates that female PWD entrepreneurs participating in the online marketplace earn a higher income than those with only a bricks-and-mortar presence, but there is also some indication that certain products/services were less conducive to the online marketplace. Hence, we wanted to explore any heterogeneities in the effects of online marketplace participation on income by sector/industry. First, we look at the various sectors that the sample catered to (Appendix B). Many in the sample participated in the retail sector, especially in the Philippines, where 41% of the female PWD trainees operated in the retail industry (in particular, the ubiquitous *Sari-Sari* shops)<sup>1</sup>. In Malaysia, many trainees (34%) engaged in the F&B industry, whereas in Indonesia, they engaged in non-F&B, nonretail services such as tailoring and massaging services. There is also support for these findings in qualitative data obtained through interviews. Most of them sell their product directly to customers in the local community rather than through online stores.

To explore any heterogeneities in the effects across industries, we interacted participation in the online marketplace variable with the industry variable<sup>2</sup>. We used a linear estimation strategy with robust standard errors. The OLS results presented in Table 3 below indicate that female PWD entrepreneurs who participated in the online market experienced about a 287% increase in their business income. These results are robust with and without controls. The industry and country fixed effects, however, are not statistically significant. Given the small degrees of freedom, these results need to be read with caution. There is some indication that female PWD digital entrepreneurs in the F&B industry experienced a lower income change across training periods than female PWD entrepreneurs in other industries. All other interaction terms for industries and online marketplace participation are not statistically significant. In the interviews, we discovered that many F&B entrepreneurs continue with their physical business during lockdown periods rather than going online, due to the increased online competition for this business segment. This partly explains the lower income received by trainees in the F&B industry compared to other business segments.

For retailers, some of the interviewees began to expand their market through the digital marketplace by leveraging on their physical store. As PH08 explained, “Even though I don’t have big capital, I will use my capital from my (physical) store to fund my online business. I will use the income from my store to pay for the orders of my online clients. Once the online goods are delivered, the money will be collected immediately.”

We also asked trainees to indicate their family’s ability to meet three basic needs before and after the training: food, shelter, and transport (a proxy for access to wider support services).

Descriptive analysis from the data indicates that female PWD entrepreneurs and their families were better able to meet food-related expenses after the training (Figure 3), and those who traded in the online marketplace were in a better position to meet their family’s food expenditure needs. The evidence here is in line with findings for the first research question. A similar trend is also observable in responses to questions about families’ ability to meet expenses related to shelter and transport (Appendix C). Therefore, there is some indication that entrepreneurial training (tailored to PWDs) and

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<sup>1</sup> *Sari-Sari* shops are pop-up retail stores that trade in sundry items and usually serve a small neighborhood/locale.

<sup>2</sup> For the purpose of this analysis, we combined agriculture as part of others due to the relatively small number of trainees taking part in the agricultural industry.

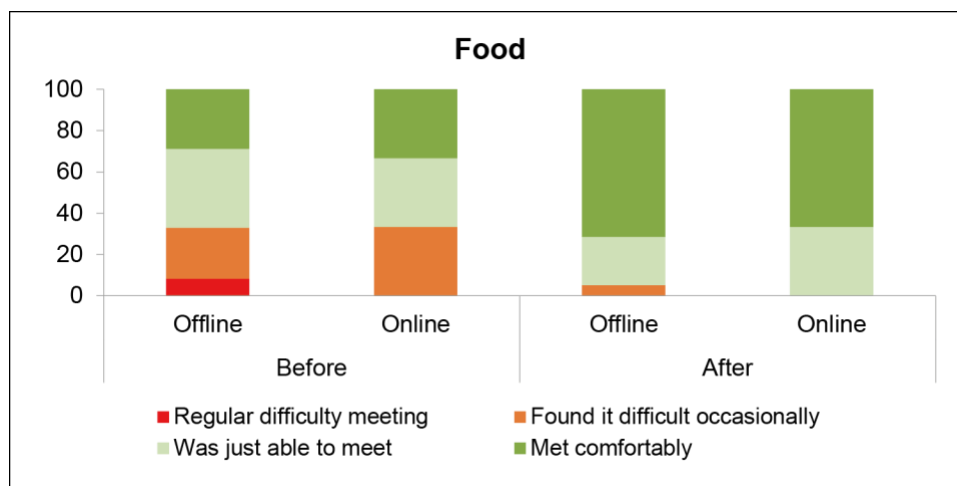
participation in the online marketplace can improve welfare effects for female PWDs and their families. Similar narratives also emerged from our qualitative data.

**Table 3: OLS Estimates of Interaction Effects**

Dependent variable: <i>natural log of difference in income</i>	
Online Marketplace	1.1026** (0.3937)
Retail	0.1023 (0.1453)
Food and Beverage	0.1484 (0.1322)
Services	0.0335 (0.1352)
Online*Retail	-0.7045 (0.4640)
Online*Food and Beverage	-1.040* (0.4685)
Online*Services	-0.6152 (0.4404)
Other Controls	✓
Observations	1,252
R <sup>2</sup>	0.0136

Note: \*\*p < 0.01, \* p < 0.05. Robust standard errors in parenthesis. The reference category for sector is others. Other covariates include country dummies for Indonesia and the Philippines, and indicators for training batch and participant demographics.

**Figure 3: Ability to Meet Household’s Food Needs**



One of the challenges faced by female PWD entrepreneurs is the need to balance family household responsibilities and their business, thus limiting their ability to fully engage in their business. ID45 revealed that she could not focus on her business “wholly, because I have to focus on taking care of my child.” Most of the interviewees manage their business on their own, including the production, marketing, and sale of products. Many of them had to rely on their own limited digital skills to promote their product on social media platforms and interact with potential customers. A few interviewees had attempted to use e-commerce platforms (such as Lazada, Shopee, Grab, and Gojek) but struggled to maintain this due to a lack of manpower.

## 5. DISCUSSION

Our findings from the previous section demonstrate a clear dynamic interaction between the macro, meso, and micro levels, thus providing support for the framework introduced in McAdam, Crowley, and Harrison (2019). The main results indicate that female PWD entrepreneurs generate better income if they participate in the online marketplace—with dynamic interaction between several factors at all three levels driving these results. Given these findings, it is important to understand: (i) why participating in the online marketplace is beneficial for female PWD entrepreneurs; (ii) why, given the benefits, all female PWD entrepreneurs don't participate in the online marketplace; and (iii) what can be done to help more female PWD entrepreneurs participate in the digital space. We explore these three themes below.

### 5.1 The Benefits of Participating in the Online Marketplace

Participation in the online marketplace enables a wider customer base, reduces capital and overhead costs, and improves participation for female entrepreneurs with disabilities (Rosenbaum 2017). Most female PWD entrepreneurs are involved in home-based businesses or local stores, often out of necessity to support the family expenses (Paul and Sarma 2013). The digital marketplace exposes their business to potential resellers, especially for frozen products and handicraft. Social media provide easy and free channels for communication with potential customers (Rosenbaum 2017), from answering enquiries to the closing of deals and confirmation of payment.

### 5.2 Barriers to Participating in the Online Marketplace

Findings in the literature indicate that digital technologies play a crucial role in enabling new business creation (von Briel, Recker, and Davidsson 2018) and the empowerment of women (Dy, Martin, and Marlow 2018). The question then is: Why do we not see more female entrepreneurs with disabilities make use of the online marketplace? This is a question we directed to our bricks-and-mortar female PWD entrepreneurs. The most common limitation is technical know-how. While trainees indicate that they can learn to use the various online platforms, they struggle to optimize the content to attract more customers. Second, they are unable to devote time to marketing their product online through regular posting and responding to enquiries. This is due to the size of their operation—which is usually a single-person operation with occasional support from family members.

### 5.3 Institutional Support: Overcoming Barriers to Participation in the Online Marketplace

The interviews revealed that the level of institutional support for PWDs between the three countries varied. In Malaysia, many PWDs received monetary support and training opportunities from the Welfare Department. In the Philippines, support is received from local PWD associations and nongovernmental organizations (NGOs), much of which is cash handouts or targeted skills development that do not necessarily focus on entrepreneurship. In Indonesia, the welfare support for PWDs via official channels is dire compared to the level of support in Malaysia and the Philippines.



PWD female entrepreneurs also have difficulty raising funds from financial institutions (Harrison et al. 2018). Therefore, most of the businesses are limited to home-based small ventures. The lack of capital also limits their ability to participate in the digital marketplace. Further, this limits their ability to recruit additional manpower to manage both their online and offline presence. Female PWD entrepreneurs also often need to divide their time between business and family responsibilities (Pergelova et al. 2019). Their location in rural areas means that even when they could afford the devices, internet access remains a challenge. The rural setting also limits the options of online delivery services and increases the cost of delivery, thus making digital business less competitive. This resulted in limited participation in online marketplaces among women PWD entrepreneurs, despite the improved income levels observed among those who were able to take advantage of the benefits of doing business online.

Meso-level intervention through training has reduced institutional voids by providing female PWD entrepreneurs with the confidence and knowledge to participate in the online marketplace. However, this is largely limited to social media-based marketplaces. More training will be required to equip trainees to access the wider online marketplace. Digital entrepreneurship training and mentoring can help to ease female PWD entrepreneurs' entry into delivery systems and e-commerce platforms that are suitable for small home-based businesses.

## 6. CONCLUSION

This study focused on the impact of entrepreneurial training and online marketplace participation among female PWD entrepreneurs. Evidence from the mixed-methods analyses indicate that entrepreneurial training that is tailored to PWD entrepreneurs (such as the R.I.S.E. program) can help female PWD entrepreneurs increase their business income and enhance their ability to support their families. In addition, there is also evidence that female PWD entrepreneurs who participate in the online marketplace outperform their bricks-and-mortar peers.

These findings demonstrate the adaptability and applicability of McAdam, Crowley, and Harrison's (2019) framework to a more vulnerable group of persons with disabilities, with empirical support to enhance the development of the framework. Specifically, we demonstrate that the household and institutional support necessary for marginalized communities such as PWDs to become successful entrepreneurs can be captured using the framework, leading to a theoretical contribution in this area.

While institutional voids in the broader environment adversely affect female PWD entrepreneurs, the findings indicate that online marketplace participation empowers them. We contend that the online marketplace may lack the emancipating effect as argued by Dy, Martin, and Marlow (2018), but through meso-level intervention, challenges such as access to mentoring and the know-how of digital entrepreneurship may be reduced. Rather than examining women PWD entrepreneurs and the online marketplace as two separate variables in which many barriers can potentially interact and exacerbate the conditions, it is appropriate to look at a holistic evaluation to achieve the emancipating effect. Therefore, we believe this study offers practical and actionable implications for policy development.

Further, this study provides external validity and complements results in the literature on regional development using data from three Southeast Asian nations. The three countries we study are also interesting due to their varying economic and cultural backgrounds. To the best of our knowledge, we are the only study to have explored

the welfare effects of online marketplace participation by female PWD entrepreneurs in this region.

## 6.1 Limitations

While our findings present new evidence on the importance of entrepreneurial training and online marketplace participation for female PWD entrepreneurs to support their families, we acknowledge potential limitations of this study.

First, there may be self-selection. While PSC had recruited trainees for the R.I.S.E. program in collaboration with NGOs and state agencies, PWDs who eventually participated in the program may have self-selected into the programme. Participation in the online marketplace was also a self-selection process and did not follow a random assignment. Therefore, there could be some upward bias in estimations. Studies using controlled experiments with random assignment for selection may provide more robust estimates.

Second, we are constrained by the availability of data. While it would be interesting to have more demographic and training and mentoring data to evaluate the research questions, we are limited by the data available to us. We do not expect additional data to change our main findings, but studies that are able to use more granular data would be able to provide more nuanced findings.

Third, we set out to explore female PWD entrepreneurship, and therefore we did not conduct a two-way comparison between male and female PWD entrepreneurs in online and offline markets. Studies with access to larger data sets that would allow for such comparisons may be able to provide us with more insights in this area.

## 6.2 Policy Implications and Concluding Remarks

Based on our observations and those in the literature, it is evident that the number of female PWD entrepreneurs in the online marketplace is still small despite the greater opportunities it affords. Aspiring female PWD entrepreneurs also need access to capital and/or credit markets to start or expand their business beyond the current small home-based ventures. Many female (and male) PWD members come from marginalized communities with little access to credit markets due to a lack of ownership of assets.

There is hope, however: Younger female PWD entrepreneurs are more inclined towards the digital marketplace due to their familiarity with digital technology, and internet coverage is expanding regionally. Institutional support and more training and workshops to help female PWDs with mobile and electronic commerce skills could further enhance participation and offer greater opportunities. Such programs, based on our findings, should also focus on growing and sustaining ventures.

There are also varying policy intervention needs at the country level. In Malaysia, the availability of a functional database of persons with disabilities has made it easier for nongovernmental organizations and state authorities to reach out, support, and tailor programs for PWDs. Therefore, Malaysia may focus on programs to cater to female PWDs, with particular emphasis on the technical know-how to market and deliver products through established online platforms. This contrasts with the context in Indonesia, where information on PWDs is not easily available, scattered, or not up to date. Authorities in Indonesia may, therefore, need to start with a functional database of PWDs prior to setting up programs to support female PWDs. In the Philippines, while state-level databases are not up to date, informal and formal associations set up by

volunteers and support groups have made access to PWDs easier. The authorities in the Philippines can therefore support local NGOs in carrying out entrepreneurial support activities or may alternatively bring together the web of NGOs currently supporting PWDs within a state framework of support.

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## APPENDIX A: RISE TRAINING PROGRAM AND TOPICS

Day	Malaysia	Indonesia	The Philippines	English Terms
1	Kesedaran and Perubahan Profil Perniagaan Analisa Pelanggan	Kesedaran and Perubahan Profil Memilih Usaha Analisa Pelanggan	Kamalayan and Pagbabago Business Profiling Customer Value Proposition	Awareness and Change Profiling Customer Analysis
2	Strategi “Blue Ocean” Perancangan Operasi Personaliti Jurujual Strategi Pemasaran	Strategi Lautan Biru Analisa Rancangan Operasional Usaha Kepribadian Seorang Penjual Strategi Penjualan	Blue Ocean Strategy Operation Planning Sales Personalities Sales Strategies	“Blue Ocean” Strategy Operation Planning Sales Personalities Sales Strategies
3	Pengenalan Pengurusan Kewangan Matlamat Kewangan Bajet and Penjejakan Perbelanjaan Property Investment and Scams	Pengenalan Keuangan Target Finansial Anggaran Belanja and Pemantauan Investasi Properti	Introduction to Financial Management Financial Goal Budgeting and Tracking Property Investment and Scams	Introduction to Financial Management Financial Goal Budgeting and Tracking Property Investment and Scams

**APPENDIX B: SECTORAL PARTICIPATION OF SAMPLE**

	<b>Retail</b>	<b>F&amp;B</b>	<b>Services</b>	<b>Agriculture</b>	<b>Other</b>
Malaysia	13%	34%	18%	8%	25%
Indonesia	26%	18%	36%	6%	14%
The Philippines	41%	24%	10%	3%	20%
Total	27%	23%	25%	6%	18%



## APPENDIX C: ABILITY OF THE FAMILY TO MEET SHELTER- AND TRANSPORT-RELATED NEEDS

