



Impact of Covid-19 Policies on Women Self-employment Rates: An Integrated Conceptual Framework

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Abstract. An integrated framework for studying the effects of COVID-19 policies on women self-employment rates is not available despite the increased economic activity of women in self-employment across several countries. The main objective of this paper is to develop a conceptual framework for the effects of COVID-19 policies on women self-employment rates, and the moderators of the relationship. Based on a critical review of the literature, we develop a conceptual framework, which consists of two types of COVID-19 policies, namely hostile lockdown policies (i.e., those that restrict community movement) and less/non-hostile policies (i.e., those that do not restrict movement). We then theorize the direct effects of these policies on women self-employment rates, and the factors that moderate the relationship. First, compared to men, hostile COVID-19 lockdown policies are more likely to have negative effects on women self-employment rates. Secondly, hostile COVID-19 lockdown policies are more likely to have a negative impact on women in self-employment, relative to women in wage employment. Third, the effects of COVID-19 policies on women self-employment rates are moderated by social factors (i.e., marriage and caring responsibilities) and economic development factors (i.e., level of human development, income support measures, size of the informal economy, and informal cross-border trading). The

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paper offers several guidelines for the formulation of public policies related to epidemics/pandemics and their effects on women self-employment rates.

Keywords: women self-employment; COVID-19 policies; institutional theory; social factors; economic factors.

1. Introduction

The coronavirus disease (COVID-19) has affected all aspects of human life. What started as a health crisis soon turned into a pandemic and a global economic slowdown, which put the health, jobs, and incomes of millions of people around the world at risk (ITC, 2020; Bartik et al., 2020). As the pandemic progressed and the death toll rose, several countries pushed to vaccinate a high share of their populations (e.g., 50% to 75%) to achieve herd immunity (Britton, Ball and Trapman, 2020). However, the public health crisis and its consequent socio-economic effects continued. The lockdown measures adopted by several countries to contain the spread of COVID-19 resulted in severe restrictions in many aspects of economic and social activities, with a substantial economic impact throughout the world (ITC, 2020).

The collapse in total hours worked, the decline in labour force participation rates, and the impact on unemployment have not been experienced since the Second World War (World Bank, 2020). Analysts are also drawing parallels between the Great Depression and the COVID-19 pandemic, which the First Deputy Managing Director of the International Monetary Fund (IMF), has labelled “The Great Lockdown” (Gopinath, 2020). Small and medium-sized businesses (SMEs) have been particularly affected by the great lockdown, with many of them experiencing reduced market demand for their products and cash flow depletion (Bartik et al., 2020). These challenges have ultimately resulted in the closure of several SMEs and micro businesses across low, middle, and high-income countries (Cowling, Brown and Rocha, 2020). The adverse economic effects of the great lockdown appear to have had a greater negative impact on micro/small businesses, because these businesses typically lack the capacity to endure uncertain market conditions for a prolonged period of time, as compared to larger corporations (Cowling et al., 2015). Considering that the umbrella definition of sole trader² or self-employed is regarded as the simplest form of entrepreneurship (Blanchflower, 2000) and includes several micro/small business owners, we draw from the literature on the two forms of entrepreneurial activities.

Previous research on the impact of crises on micro/small businesses suggests that there are two broad views, which scholars refer to as the “vulnerability” and the “resilience” views (Kitching, Smallbone and Xheneti, 2009). In this context,

2. In several countries it is the case that those who wish to work for themselves and want to set up a business which is neither a limited company nor a partnership, have to register as a self-employed or sole trader (sole proprietor) (UK.GOV, 2019; FGOV.BE, 2022; GOV.MT, 2023).

the vulnerability view considers micro/small businesses, as being particularly vulnerable to crises related to economic shocks or natural disasters. On the contrary, the resilience view sees micro/small businesses as being resilient enough to be able to survive and thrive in such crises, because of their flexibility in adapting their processes and products (Kitching, Smallbone and Xheneti, 2009). While there is a considerable amount of research on the impact of crises on micro/small businesses (Adair and Adaskou, 2018), with some focusing on the period of COVID-19 (Saridakis, Litsardopoulos and Hand, 2022), there are still at least three major areas where the existing body of literature can be further developed.

First, there is a dearth of conceptual framework on the impact of government COVID-19 response policies (Sufyan et al., 2021), especially one that specifically focuses on women self-employment rates. The self-employment rate, that is the aggregate of men and women, is defined as the share of the self-employed in total employment (OECD, 2016). The self-employed can be defined as the individuals that do not work for another employer, but instead work for themselves, either as the owners of their own businesses or as freelancers (Wolfe and Patel, 2019). Self-employment is an important path to employment and an increasing trend in several regions in the world (e.g., Latin America, Caribbean, East Asia, Europe) (Bosma et al., 2020; Dellot, 2014). This is particularly true among women who are increasingly turning to self-employment to satisfy their needs and goals, and which can positively affect their well-being (Elam et al., 2021; Litsardopoulos and Saridakis, 2022; Litsardopoulos et al., 2023; Warr and Inceoglu, 2018). Self-employment can be vital to people's livelihoods, and this is particularly true for women (Anna et al., 2000; Voda, Butnaru and Butnaru, 2020; Marshall and Flaig, 2014). Relevant recent research by Bergallo et al. (2021) examined the measures used by governments in Latin America and the Caribbean (LAC) to determine the extent to which they target females. However, Bergallo et al. (2021) focused more on women's economic security, unpaid care work and violence against women, rather than analysing women self-employment rates.

Furthermore, O'Donnell et al. (2021) used a conceptual framework to show how the strategies put in place overlap with the existing fundamental gender customs and inequality in ways that negatively impact the welfare of women and girls in low and middle-income countries. But O'Donnell et al. (2021) focused on the impact of COVID-19 measures on women's health (maternal and infant care, mental health etc.) rather than on women self-employment rates. Other relevant attempts include Graeber, Kritikos and Seebauer (2021) in Germany, who found that women suffered more income loss because of COVID-19-related lockdown policies relative to men. Also, Reuschke et al.'s (2021) study in the UK showed that COVID-19 related lockdowns led to reductions in earnings and hours worked, and that women were more affected as compared to men. In the United States (US), the Kalenkoski and Pabilonia (2022) study suggests that COVID-19 policies had higher negative effects on women relative to men. Similarly, a paper

by Desai, Deshmukh and Pramanik (2021) in India found that women had higher job losses during COVID-19 when compared to men. Although not specifically related to self-employment, in Nigeria, a paper by Kabir and Abubakar (2023) found that while ethnic minority businesses in developing countries are vulnerable to government policy responses to COVID-19, entrepreneurial orientation (EO) reduces the adverse effects of government policies. However, despite the contributions of these studies, none of them specifically focused on women self-employment rates. It is important to understand self-employment rates because of the economic impact self-employment may have in reducing unemployment and enhancing economic performance (Abubakar, 2013; Rupasingha and Goetz, 2013; Thurik et al., 2008).

Moreover, women tend to operate much smaller businesses than men (Tigges and Green, 1994), and the COVID-19 pandemic had an overall stronger impact on women than men (Elam et al., 2021; Graeber, Kritikos and Seebauer, 2021). Yet, there are only a limited number of studies attempting to conceptualize the effects of government COVID-19 response policies on women's self-employment. Research specifically targeted to economic crisis and self-employed women are very scarce, and most of the existing studies (e.g., Mathew et al., 2020) do not focus on the impact of government COVID-19 policies on women self-employment rates and the factors that moderate the relationship.

Secondly, although there are different types of government policies developed for responding to COVID-19, along with their varying levels of hostility to businesses (Farsalinos et al., 2021), there is limited understanding of the impact of such policies on the vulnerability/resilience of self-employed women and the factors that moderate the relationship. In this context, institutional theory provides us with a very useful framework for conceptualizing the effects of government COVID-19 response policies on women self-employment rates. Institutions refer to the "rules of the game in a society". North (1990) postulates that when they are efficient, these 'rules' can reduce the risks and uncertainties that micro/small businesses face — but can be hostile when they are inefficient (Abubakar et al., 2019; Kabir, Abdullahi and Naqshbandi, 2023; Smallbone, North and Kalantaridis, 2022). Thus, some studies categorize institutions into hostile and less/non-hostile institutions (Abubakar et al., 2019; Abrishamkar, Abubakar and Mitra, 2021; Smallbone, North and Kalantaridis, 2022). Hostile institutions refer to those that obstruct the performance of micro/small businesses (Abubakar and Mitra, 2013).

In contrast, the less/non-hostile institutions refer to those that offer a better environment for micro/small enterprise (Covin and Slevin, 1989), and those that promote new business formation, survival, and growth (Abubakar and Mitra, 2007, 2017). As such, some COVID-19 policies developed by governments can be more hostile than others, especially those that restrict community movement, in particular lockdown measures (Setyawan and Lestari, 2020). Lockdowns can be considered as "hostile COVID-19 policies" since they restrict community

movement almost completely. On the other hand, policies that have less or no restrictions on community movement, such as those that focus on social distancing and the wearing of facemasks in public (Greenstone and Nigam, 2020), can be considered as “less/non-hostile COVID-19 policies”. However, to date hardly any study exists that has conceptualised the impact of hostile and less/non-hostile COVID-19 policies on the vulnerability/resilience of self-employed women.

Thirdly, the relationship between COVID-19 policies and women self-employment rates is likely to be moderated by some other factors because there are other elements that affect the changing levels of self-employment (Fritsch, Kritikos and Rusakova, 2012; Fritsch, Kritikos and Sorgner, 2013; Fisher and Lewin, 2018). For example, the literature suggests that socio-demographic characteristics, such as marriage and caring responsibilities (Fritsch, Kritikos and Rusakova, 2012; Blundell and Machin, 2020), and the economic environment (e.g., human development level, size of informal sector, etc.) of a country may influence self-employment, since it affects the costs and the benefits of starting/running a business (Fritsch, Kritikos and Sorgner, 2013). Yet, to date, there is a scarcity of studies that theorise the moderating effects of social and economic factors on the relationship between COVID-19 hostile/less hostile policies and women self-employment rates.

Based on the research gaps identified, the main aim of this paper is to develop a conceptual framework for the effects of government COVID-19 policies on women self-employment rates, and the factors that moderate the relationship. Therefore, the two key objectives of the paper are: firstly, to conceptualise the direct effects of COVID-19 policies (hostile lockdowns and less/non-hostile policies i.e., non-lockdown policies) on women self-employment rates; and secondly, to conceptualise the factors that moderate the effects of COVID-19 policies on women self-employment rates.

The identified research gaps and the developed objectives suggest that the existing research addressing the aforementioned issues is very limited. There is a need for policymakers to determine the impact of the implemented COVID-19 policies on women self-employment rates and the factors that moderate the relationship. A study that addresses the above objectives can contribute to the development of a body of knowledge that can enlighten policy makers about the types of COVID-19 policies that have negative or positive effects on women self-employment rates, and the role of social and economic factors in moderating the relationship. It can therefore guide policy makers in designing policies that may be less harmful to women self-employment rates. Our paper therefore draws on existing literature to develop an integrated framework and new propositions related to the influence of COVID-19 policies on women self-employment rates, and the moderators of the relationship.

Our methodological approach to this study is based on a critical literature review, with the aim of theory development (Fink, 1998). The literature review is

used for expanding theoretical ideas that do not need to be created through data collection (Seuring and Müller, 2008). The literature review often has two main objectives. First, to complete a summary of the existing research to identify new research issues. Secondly, to be able to develop a conceptual framework and new propositions that can contribute to theory development (Seuring and Müller, 2008).

Consequently, this paper reviews the existing self-employment and micro/small business literature to draw insights on the factors that affect women in business (i.e., professionals and sole traders falling under the self-employed definition) to develop a new conceptual framework, along with propositions related to building a conceptual framework for the effects of COVID-19 policies on women self-employment rates. Consequently, the paper can contribute to the literature on women self-employment by theorising the influence of COVID-19 policies on women self-employment and the factors that moderate the relationship. Therefore, it not only contributes to the development of theory, but it also caters to the need of policymakers that support women self-employment by identifying the implications for policy. It can also serve as a guide for the development of future empirical studies that test the propositions which are developed in this paper.

The rest of the paper is organized as follows. In Section 2 below we begin with a theoretical background, which outlines the impact of COVID-19 on women in the labour market. We then proceed by examining the vulnerability and resilience of self-employed women in crisis periods. Specifically, in Section 2.3 we present our integrated conceptual framework. Lastly, in Section 3, we conclude with some policy implications and directions for future research.

2. Theoretical background

2.1. Broad Factors Affecting Self-employment During the Covid-19 Crisis

There are different theoretical explanations in the literature for the drivers of the changing levels of self-employment, of which socio-demographic, economic factors and institutional factors are considered important (Carrasco and Ejrnæs, 2003; Fritsch, Kritikos and Sorgner, 2013). Recent studies are beginning to examine some of these issues in the context of the COVID-19 crisis. First, the variations in the socio-demographic characteristics of a population may affect changes in self-employment. This is because past studies provide persuasive evidence, which suggests that a person's tendency to start and run a business is affected by several social factors. For example, in Germany, a study by Fritsch, Kritikos and Rusakova (2012) found that the likelihood of being self-employed tends to be higher for married people, and also for people with a non-German

nationality (Fritsch, Kritikos and Rusakova, 2012). Moreover, a study of the COVID-19 pandemic period in the UK by Blundell and Machin (2020) found that self-employed women who worked from home were more negatively affected as compared to self-employed men. Whilst a variety of factors might have affected the exodus of self-employed women, persistent gender stereotypes regarding the role of women in the caring for home and children likely propels women in more precarious self-employment work (e.g., unincorporated self-employment), which can exacerbate the effects of negative economic shocks (Beland, Fakorede and Mikola, 2020; Kalenkoski and Pablonia, 2022).

Additionally, in Germany, Graeber, Kritikos and Seebauer (2021) observed that the self-employed women were more likely to experience adverse income effects due to the pandemic than self-employed men. What is more, similar effects were not identified for wage-employees (Graeber, Kritikos and Seebauer, 2021). Another study by Grashuis (2021) in the United Kingdom (UK) found that female, non-white self-employed, and young individuals tend to face higher COVID-19-related unemployment risks. Similarly, a study by Mindes and Lewin (2021) in the United States (US) also found that women, Hispanics, and non-white were more negatively affected by COVID-19 in both the self-employment and wage-related sectors. Hence, socio-demographic factors may influence self-employment rates, although they are still understudied from the perspective of the COVID-19 crisis.

Secondly, variations in the economic factors of a country may influence self-employment, since it affects the benefits and costs of starting and running a business (Fritsch, Kritikos and Sorgner, 2013). In this context, a number of studies have examined the economic elements that affected self-employment during the COVID-19 pandemic. For example, Pereira and Patel (2022) examined whether the self-employed lost more hours in comparison to the employed during the COVID-19 crisis. They found that relative to the employed, the self-employed people reported a greater loss of hours. Other economic factors that can affect self-employment, which are under-researched from the perspective of COVID-19, include the role of human development, since people with more experience and education are more likely to be pulled into self-employment (Fisher and Lewin, 2018). There is also the informal sector, especially in low-income countries, since informal sector self-employment and necessity entrepreneurship are more prevalent in the developing economy context (Acs, Desai and Hessels, 2008; Laing, Van Stel and Storey, 2022). In addition, government income support measures for the economy can affect self-employment, since they can enhance the resilience of the self-employed (OECD, 2020a), along with informal cross border trade, which can influence self-employment especially in low-income countries (World Bank, 2022; World Bank and WTO, 2018). Other economic factors that can influence self-employment include the role of business cycles, where favourable market conditions can “pull” individuals (opportunity-based) into self-employment and less favourable

conditions “push” individuals into self-employment (necessity-based) (Carrasco and Ejrnæs, 2003).

A third stream of literature focuses on the influence of institutions, such as regulations and policies in influencing self-employment (Carrasco and Ejrnæs, 2003). For example, a German study suggests that policies that influence entrepreneurial activities include policies aimed at transforming the Eastern states (East Germany) from being socialist to a western style market economy (Fritsch, Kritikos and Sorgner, 2013). However, to date, there has been relatively little research on the role of institutions in influencing self-employment, especially during the COVID-19 crisis. Consequently, despite the existence of the above-mentioned past studies, there is hardly any study on the influence of COVID-19 hostile/less hostile policies on women self-employment rates and the factors that moderate the relationship.

We focus on women self-employment, because although the COVID-19 crisis had a deep impact on the global labour market and continues to negatively affect the labour market in many countries (Lee, Schmidt-Klau and Verick, 2020), several recent studies suggest that women were particularly vulnerable to this economic crisis (Beland, Fakorede and Mikola, 2020; Graeber, Kritikos and Seebauer, 2021; Kalenkoski and Pabilonia, 2022; Lee, Schmidt-Klau and Verick, 2020). According to the International Labour Organisation (ILO) (January 2021), the employment loss (unemployment or inactivity) for women around the world was 5.0% in 2020, and women have been more likely than men to drop out of the labour market primarily due to their role as care givers. The United Nations Conference on Trade and Development (UNCTAD) pointed out that containment measures that were taken when the virus first started to spread impacted jobs predominantly held by women, for example, personal services, resulting in higher rates of female unemployment (UNCTAD, 2020). Globally, in addition to higher rates of female unemployment relative to males, women’s participation rates in the labour market also declined since the beginning of the pandemic. This was due to the decline in the number of women actively searching for a job along with more women leaving the labour market entirely in 2020 (ILO, 2021).

According to Djankov et al. (2021), women were affected by the occupation channel and the child-care channel in the US, Canada, Italy and Japan (the gender gap opened by 0.6%), while in other advanced countries, such as the UK, Australia, Denmark, and the Netherlands, the gender gap closed by 0.9%. In the LAC region, the gender gap has worsened along with new dimensions to the gaps (ILO, 2021). In 2020 the labour participation rate in the LAC region saw a decline of 10.3%, which translates to approximately 12 million women leaving the workforce due to job destruction (ILO, 2021). The regional unemployment rate in 2020 for women in the LAC region increased from 10.3% to 12.1%, which means that 1.1 million more women became unemployed. However, industrial segmentation and the concentration of women in certain industrial sectors are also important factors to be considered, along with the size of women-owned

businesses. A recent report by the Global Entrepreneurship Monitor observes that women tend to be predominantly found in the health, education, and social services industries, where there are more than 50 percent more women active than men (Elam et al., 2021). Conversely, women are largely under-represented in the information and technology sector, where the number of businesses operated by men in some regions (i.e., LAC) is close to four times higher than that of women (Elam et al., 2021). The same report also finds that there are many more women sole-traders (solopreneur) than there are men (i.e., up to 5 times more), with the difference being larger among the low income countries that the GEM surveys (Elam et al., 2021).

Thus, the COVID-19 pandemic and the policies pursued by governments resulted in severe adverse effects on a number of business and professional activities. In the least developed countries, with a large informal sector, female employment was severely affected. However, while there are some reports on the impact of COVID-19 on women in the labour market (Chakraborty, 2020), and some on women's self-employment (Martinez Dy and Jayawarna, 2020), there are very few studies that conceptualize and develop theoretical explanations for the impact of different types of COVID-19 policies on women self-employment rates and the factors that moderate the relationship. While the extent of policy enforcement and authoritarian implementation of COVID-19 related policies depend on the spectrum of the democratic-authoritarian regime level, the within regime-level policy outcomes should still be evident. Therefore, in the next section, we focus on the effects of institutional policies on the vulnerability and resilience of women-owned and self-employed businesses during the COVID-19 period.

2.2. How and Why Institutional Policies Matter for the Resilience and Vulnerability of Women Self-employment in the COVID-19 Crisis Period

Broadly, there are two key views about how crisis periods affect small businesses, such as the self-employed, which are: the "vulnerability" and the "resilience" views (Kitching, Smallbone and Xheneti, 2009). The vulnerability view perceives micro/small businesses as being particularly vulnerable in crisis periods, such as during economic downturns, since these can adversely affect the performance of small-sized businesses, and therefore cause their earnings to decline along with the Gross Domestic Product (GDP). From the vulnerability viewpoint small businesses are often characterized as having limited resources (Acs, 2003), which can constrain their ability to survive crisis periods (Kitching, Smallbone and Xheneti, 2009). Economic crises tend to first have negative effects on the sales of small businesses, then on their profitability, and ultimately their survivability (Smallbone et al., 1997). Considering that adverse economic conditions, such as those experienced during the pandemic lockdown, can have

considerable negative impacts on micro/small businesses that self-employed women tend to operate (i.e., sole-traders), Elam et al., (2021) suggest that self-employed women may experience exacerbated adverse economic effects during an economic crisis (e.g., the closure of women's self-employed businesses). Nevertheless, other authors have challenged the vulnerability view, arguing for the dominance of the 'resilience view' (Kitching, Smallbone and Xheneti, 2009).

From the resilience viewpoint, micro/small businesses, such as those owned by self-employed women, are viewed as being resilient enough to be able to survive and sometime even thrive in crisis periods (Elam et al., 2021; Saridakis, Litsardopoulos and Hand, 2022), due to the flexibility they have in adapting their inputs, processes, and products (Kitching, Smallbone and Xheneti, 2009). This implies that the decline in terms of GDP may not necessarily lead to the closure of women's self-employed businesses. Rather, crisis periods can even ignite business activities in some types of businesses and sectors. For instance, when customers in an economy move away from expensive products to cheaper products as part of expenditure reduction, this may benefit the businesses that supply products that are low-cost thereby having adverse effects on the producers of products that are expensive (Kitching, Smallbone and Xheneti, 2009). Consequently, to understand the resilience/vulnerability of self-employed women-owned businesses in the COVID-19 recession, we need to understand the factors that can constrain or influence the performance of such self-employed women in crisis periods. In this context, institutions are considered able to constrain or influence the performance of micro/small businesses (North, 1990; Slesman, Abubakar and Mitra, 2021). However, the literature is replete with studies suggesting that the influence of institution affects men and women differently, often to the disadvantage of women (Verheul, van Stel and Thurik, 2006; Marlow and Swail, 2015). In fact, with regards to business funding, GEM reports that "There is no region in which the percentage of women investors exceeds that of men" (Elam et al., 2021, p. 34).

Institutional theory provides us with a useful framework for understanding the factors that may affect the resilience and/or vulnerability of self-employed women in the context of policies for curbing the spread of COVID-19 that were enforced by government institutions around the world. As mentioned earlier, these institutions can constrain or influence entrepreneurial activities (Slesman, Abubakar and Mitra, 2021), such as the self-employment rate of women in a country (Torrini, 2005). Institutions include formal institutions, such as laws, rules and policies that are aimed at enabling economic or even political exchange (North, 1990). Formal institutions can be classified into hostile and less/non-hostile institutions (Abubakar et al., 2019).

Hostile institutions refer to those institutions that can constrain entrepreneurial activities, by increasing the vulnerability of micro/small businesses, thereby negatively affecting performance or even leading to their closure (i.e., vulnerability) (Slesman, Abubakar and Mitra, 2021). Conversely,

less/non-hostile institutions refer to those that are less likely to obstruct entrepreneurial activities and are more likely to positively influence micro/small businesses by increasing new business formation rates or even their performance (i.e., resilience) (Slesman, Abubakar and Mitra, 2021). The less/non-hostile policies thus include regulatory changes that lower the hurdles related to becoming self-employed (Fritsch, Kritikos and Sorgner, 2013). Therefore, we employ this categorization of institutions into hostile and less/non-hostile institutions (Abrishamkar, Abubakar and Mitra, 2021) to discuss the COVID-19 response policies of governments that may affect women self-employment rates in a country. Therefore, in the next section, we develop a conceptual framework for the effects of policy responses to COVID-19 on the self-employment rate of women.

2.3. The Impact of COVID-19 Policies on Women Self-employment Rates and the Factors That Moderate the Relationship

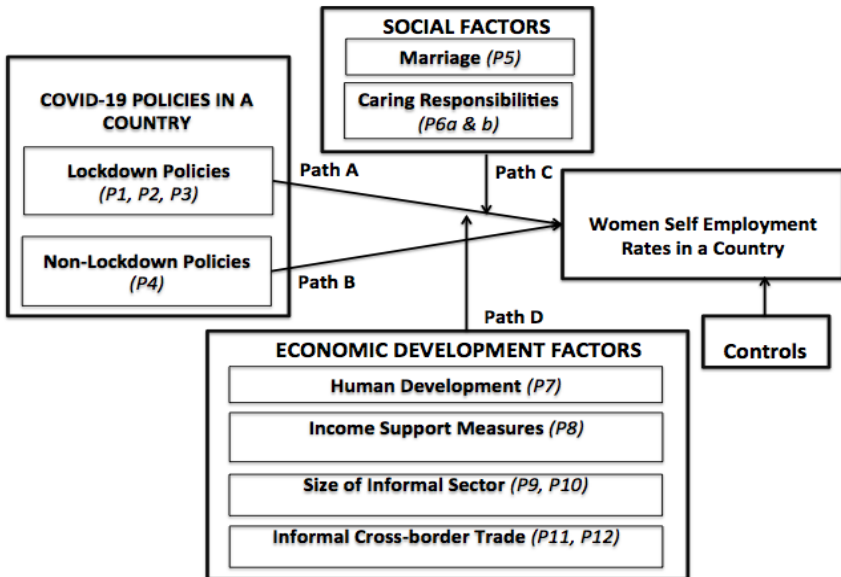
In this research paper we develop an integrated conceptual framework for the effects of COVID-19 policies on women self-employment rates, and the factors that moderate the relationship. Self-employment rates can be defined as the percentages of the self-employed in total employment (OECD, 2016). We assume that institutions can have a negative or positive influence on entrepreneurial activities (Slesman, Abubakar and Mitra, 2021), such as self-employment rates (Torrini, 2005). Based on the institutional theory (Abubakar et al., 2019) and the literature on COVID-19 policies (Setyawan and Lestari, 2020), we classify COVID-19 policies into 'hostile policies' (lockdown policies) and 'less/non-hostile policies' (non-lockdown policies). The former policies refer to the policy responses to COVID-19 that impose community movement restrictions (Setyawan and Lestari, 2020), whereas the latter policies refer to policy responses that have no (or lesser) community movement restrictions (Greenstone and Nigam, 2020). Consequently, we assume that COVID-19 policies, depending on whether they are hostile or less/non-hostile, can influence the vulnerability (i.e., have negative effects) or the resilience (i.e., have positive effects) of women self-employed.

Figure 1 presents the theoretical relationships of our arguments on which the propositions of this paper are developed. The framework includes the following effects: (a) Path A: Effects of hostile COVID-19 lockdown policies on women self-employment rates, (b) Path B: Effects of less/non-hostile COVID-19 non-lockdown policies on women self-employment rates, (c) Path C: The moderating effects of social factors: i) marriage and ii) caring responsibilities, on the relationship between COVID-19 hostile lockdown policies and women self-employment rates, (d) Path D: The moderating effects of economic factors: i) human development; ii) income support measures; iii) size of informal sector and

iv) informal cross-border trading, on the relationship between COVID-19 hostile lockdown policies and women self-employment rates.

Accordingly, we develop several propositions about the relationship between the COVID-19 policies and women self-employment rates, and the factors that moderate the relationship. The paper focuses especially on lockdown policies, given that they are more hostile to businesses. We however acknowledge that there are other factors (referred to as controls in Figure 1), which may have a negative or positive effect on women self-employment rates, such as family structure (Saridakis, Marlow and Storey, 2014; Okamuro and Ikeuchi, 2017) and other economic factors (Svaleryd, 2015) that are not covered in our framework, because they are beyond the scope of the paper.

Figure 1. An integrated conceptual framework



2.3.1. Path A: Effects of Hostile COVID-19 Lockdown Policies on Women Self-employment Rates

Hostile COVID-19 policies refer to the policies that restrict community movement (Setyawan and Lestari, 2020), especially lockdown measures. Lockdown can be defined as “a set of measures aimed at reducing transmission of COVID-19 that are mandatory, applied indiscriminately to a general population and involve some restrictions on the established pattern of social and economic life” (Haider et al., 2020: p. 2). Based on this definition, lockdown measures include: (i) home confinement, (ii) geographic containment and (iii) prohibition of gatherings and closure of establishments/premises (Haider et al., 2020).

Geographic containment refers to a specific type of lockdown policy that is related to the Chinese authorities' decision in January 2020 to restrict community movement into and from the city of Wuhan (Lau et al., 2020), except for the flow of essential goods and food. Geographic containment is mainly used in the hotspots of an epidemic to prevent them from affecting other parts of a region or country (Haider et al., 2020). *Home confinement* requires that the general population stay at home for a recommended period of time, and it is sometimes referred to as a 'curfew' (Haider et al., 2020).

However, in this paper, when we use the term 'lockdown', we are referring to the third type of lockdown policy which is the *prohibition of gatherings and the closure of establishments/premises* (Haider et al., 2020). This refers to the closure of businesses, shops, restaurants, universities, schools, and other establishments/premises, including the restriction or prohibition of gatherings. Just like the other lockdown types, these restrictions normally exclude essential businesses, industrial activities, or some types of essential gatherings. In some cases, certain types of premises may be kept opened for specific groups of people, such as the children of essential workers (Haider et al., 2020).

Our arguments are only focused on the third type of lockdown, that is, the prohibition of gatherings and the closure of establishments/premises, since it has more direct effects on the closure of business activities (Haider et al., 2020). These are the aggressive policies that constrain businesses activities, including the businesses of self-employed women. In this context and in order to make a judgment on the effects of hostile COVID-19 lockdown policies, we take into consideration a number of possible sub-questions. Although hostile lockdown policies may effectively reduce the spread of the virus (Amer et al., 2021), recent research indicates that lockdown length comes at a cost, which is proportional to GDP loss (Balmford et al., 2020). However, the choice of policies should be guided by the analysis of cost and benefits. Essentially, policymakers have a responsibility for effectively analysing the risk of losing human lives before implementing any policy, and must therefore, try to prioritise human lives over economic indicators (Balmford et al., 2020).

First, we consider the question of whether hostile COVID-19 policies will have positive or negative effects on women's self-employment rates. In this context, past research suggests that although businesses can exhibit great levels of resilience (Bullough and Renko, 2013), hostile COVID-19 policies, such as lockdowns, tend to hit smaller businesses (Pedauga, Sáez and Delgado-Márquez, 2022), and particularly self-employed women more severely (Graeber, Kritikos and Seebauer, 2021). However, the impact on self-employed women was not so much in the form of business exit, but rather in the reduction of their working hours and earnings (Reuschke et al., 2021).

Due to the lockdowns during the COVID-19 outbreak, there were restrictions on movement (including customers) and self-isolation of COVID-19 patients, which resulted in disruptions of supply chains, labour supply shortages, and high

levels of decrease in capacity utilization (Pedauga, Sáez and Delgado-Márquez, 2022). Therefore, from a supply perspective, the lockdown policies have created unforeseen and unfamiliar difficulties in the supply of goods and services that exerted excessive strain on the inventory management systems of several manufacturers.

Additionally, consumer demand declined, as it was no longer possible for people to move freely, gatherings were restricted, and high-street businesses were forced to close their doors to the public. These affected several types of consumer activities, such as shopping for discretionary items, going to restaurants, and engaging in experience-based activities (Goolsbee and Syverson, 2021). Therefore, from a demand perspective, the lockdown policies disrupted the flow of income because of disruption in the payment of wages, and the reduced demand for both investment and consumption (Coibion, Gorodnichenko and Weber, 2020). For example, a study by Pedauga, Sáez and Delgado-Márquez (2022) in Spain found that 43% of the decline in income and two-thirds of the decline in employment that occurred as a result of the COVID-19 pandemic can be explained by SMEs. Similarly, another study by Lu et al. (2020) found that due to the COVID-19 pandemic, a large number of SMEs faced risks related to cash flow because of the need to pay for fixed expenditure in spite of having little or no income. Furthermore, a study by Uzir et al. (2022) found that during the COVID-19 pandemic, the fear of business loss of income increased the psychological distress of SME owners. Moreover, because smaller businesses tend to have lower revenue, this increased the solvency problems and liquidity shortages faced by this particular group of businesses (Pedauga, Sáez and Delgado-Márquez, 2022).

In addition to the lockdown measures, women-owned businesses tend to face intersecting challenges of gender and scale, which may increase their vulnerability to the COVID-19 lockdown, especially considering that they are more likely to own micro and small-sized businesses in low-return sectors (Abebe, Bundervoet and Wieser, 2020). For example, women-owned businesses tend to have lower turnover, are less likely to hire labour, and have limited access to finance (World Bank, 2019). Also, in Zambia, a paper by Mathew et al. (2020) found that during the COVID-19 pandemic, women were particularly affected by the hopelessness of reviving their businesses, difficulty in accessing health services, psychological trauma and the challenges of keeping children indoors as a result of lockdown policies. However, none of the above studies examined the impact of lockdown policies on women self-employment rates.

Consequently, taking into consideration that lockdowns have had severe negative impacts on micro/small businesses (Pedauga, Sáez and Delgado-Márquez, 2022), that self-employed people often have lower resource shortages (Ghose, 2020), and that women-owned businesses have greater challenges (World Bank, 2019; Abebe, Bundervoet and Wieser, 2020; Mathew et al., 2020), have led us to the following proposition:

P1: Hostile COVID-19 lockdown policies are likely to have a significant negative impact on women self-employment rates in a country.

Secondly, another interesting question about the hostile COVID-19 lockdown policies is whether hostile lockdown policies are more likely to affect the self-employment rates of women rather than the self-employment rates of men. In this context, although there is a dearth of studies that focus specifically on the impact of lockdown on women self-employment rates, there are past studies that suggest that women are more likely to suffer from COVID-19 lockdown policies when compared to men. For example, in the United States (US), Grashuis (2021) found that self-employed females and non-white had a somewhat higher risk of unemployment during the COVID-19 period. Similarly, using data from Germany, Graeber, Kritikos and Seebauer (2021) observed that women are more likely to suffer income loss due to COVID-19-related lockdown policies as compared to men. Also, a paper by Reuschke et al (2021) in the UK found that because of COVID-19 related lockdowns, reductions in earnings and working hours are more likely to be experienced by women relative to men. In addition, in the US, Kalenkoski and Pablonia (2022) found that COVID-19 policies had greater negative effects on married women relative to married men, and on married mothers in comparison to married fathers. Likewise, in India, for wage workers, Desai, Deshmukh and Pramanik (2021) found that women had higher job losses as compared to men. Further, beyond COVID-19-related studies, previous research suggests that men and women have different responses to crises, and that there are gender-based differences in their businesses' survival rates (Marshall et al., 2015). For example, studying the impact of Hurricane Katrina, Marshall et al. (2015) found that women-owned businesses are more likely to experience failure relative to men-owned businesses. Morrow and Enarson (1996) studied gender differences in response to Hurricane Andrew, and their findings suggest that women-owned businesses tend to be more negatively affected by crises. Similarly, in a study of the crisis related to the Wenchuan earthquake in China, Li et al. (2020) found that male business owners have a higher potential to succeed in running their businesses continuously compared to businesses owned by females. While the factors affecting the performance of women-owned and men-owned businesses during a crisis can differ and considering that one crisis is hardly the same as another, the outcome is relatively consistent across themes; women experience overall worse outcomes than men during crises.

Additional evidence comes from the experience of the 2008 global recession. For example, after the 2008 global recession, a study by Cesaroni, Sentuti and Buratti (2015) found that while male entrepreneurs dealt with the recession based on an offensive approach, in contrast, women entrepreneurs focused on a defensive approach. During financial crisis, women have also been found to focus more on family, and therefore have greater difficulties with internal psychological balance and higher work-family conflict relative to their male

counterparts (Cesaroni, Pediconi and Sentuti, 2018). Taken together, past research shows that women are more likely to be more negatively affected by natural disasters and economic crises. Therefore, we extend these arguments into the context of the COVID-19 crisis, by proposing that:

P2: Hostile COVID-19 lockdown policies in a country are more likely to have a significant negative impact on women self-employment rates in comparison to men self-employment rates.

Thirdly, another question is whether hostile COVID-19 policies are more likely to affect women in self-employment in comparison to women in wage-employment. In this regard, recent research on the impact of the COVID-19 crisis on the world of work, indicates that several European government interventions to protect businesses from closing were designed to support the labour costs of the businesses (i.e., the wage-employed staff) rather than the self-employed business owner (Battista, 2020). For instance, Italy and Austria tried to protect as many workers as possible by avoiding income reduction, unemployment, and layoffs especially for the wage employees (Battista, 2020). Other countries, such as Finland, directed policy intervention towards wage-employees, but also made provisions for people earning income from business activities (Rosin, 2020).

Therefore, wage-employees, who are the traditional beneficiaries of social security and labour laws, were provided prompt protection through measures such as sickness benefits and employment retention schemes. The adaptation of these measures by many countries was important to reduce the impact of COVID-19 general lockdowns. The measures provided relief to wage-employees who were offered shorter working hours and work-from-home provisions to consequently reduce redundancies (Battista, 2020).

In contrast, self-employed workers tend to be more excluded from these measures or were relatively less covered in terms of social security (Battista, 2020; Cielik and Van Stel, 2023). The difficulties are amplified in precarious work situations where the incomes of self-employed people, who officially work for themselves, is essentially dependent on another company which acts as their employer (e.g., uber drivers) (Sanchis Llopis et al., 2015). This is because of their heterogeneity in terms of priorities, needs and contributory capacities, as well as the lack of an employer who can share or carry the burden of contributing to their social security (Behrendt and Nguyen, 2018). Young people and women are frequently found among those in precarious self-employment situations (Glavin, Filipovic and Van der Maas, 2019; OECD, 2000). Thus, this implies that self-employed women are less protected in comparison to women in wage-employment. The foregoing suggests the following proposition:

P3: Hostile COVID-19 lockdown policies are more likely to have a negative impact on women in self-employment (in terms of self-employment decline rate), compared to women in wage-employment (in terms of wage-employment decline rate) in a country.

2.3.2. Path B: Effects of Less/non-hostile COVID-19 Non-lockdown Policies (Face Masks and Social Distancing) on Women Self-employment Rates

In contrast to the hostile COVID-19 lockdown policies, the “*less/non-hostile COVID-19 non-lockdown policies*” refer to those that do not have restrictions on public movement (including both businesses and customers) or have fewer restrictions. These policies are imposed on the population but do not have restrictions on freedom of movement or normal patterns of social and economic life (Haider et al., 2020). These measures include making it compulsory for people to wear facemasks in public or to abide by physical distancing rules in public (Haider et al., 2020). Thus, it can be argued that the less/non-hostile policies are likely to have a lesser negative impact on business activities, because these policies have less or no restrictions on public movement. These less/non-hostile policies allow the continuation of business activities without much interruption.

For example, in 2020, Brunei Darussalam avoided domestic implementation of hostile lockdown policies (except for the international border) (Chaw et al., 2020); hence, the country focused on less/non-hostile policies like social distancing, which allowed businesses to remain opened, with no restrictions on community movement (Chaw et al., 2020). The outcome was that the economy and businesses in Brunei both recorded positive performance (Djalante et al., 2020). Also, a study by Lutfi et al. (2020) shows that although social distancing policies can decrease the demand and income for the products of SMEs, they are less likely to lead to the termination of employment. Hence, we expect less/non-hostile policies to be less harmful to women self-employment rates, compared to hostile lockdown policies. We therefore propose the following:

P4: Less/non-hostile COVID-19 non-lockdown policies are less likely to have a negative impact on women self-employment rates in comparison to hostile COVID-19 policies in a country.

2.3.3. Path C: Social Factors as Moderators in the Relationship Between Hostile COVID-19 Lockdown Policies and Women Self-employment Rates

Marriage

In general, past studies on self-employment suggest that while human capital and economic factors are particularly important factors in explaining men’s self-employment rates, social factors tend to be more important in explaining women’s self-employment rates (Saridakis, Marlow and Storey, 2014). Although marriage and children tend to encourage self-employment, yet this is predominantly true for women who demonstrate a strong association between their preference for self-employment and their parental status (Boden, 1999). One of the main differences identified in the literature on women’s self-employment

is the specific importance of family characteristics (such as marriage and caring for children), which can both pull and push women into self-employment (Patrick, Stephens and Weinstein, 2016).

Scholars argue that marriage can pull women towards self-employment because it can act as a way for women to overcome outmoded social role expectations (e.g., home-maker, housewife), or career barriers in wage-employment associated with gender (Treanor and Marlow, 2021). It can also pull them into self-employment because married women tend to have a higher level of resources (Patrick, Stephens and Weinstein, 2016). A self-employed husband (or one that had been previously self-employed) can provide their spouse with the extra resources she needs related to human capital and experience, both of which are relevant to self-employment (Parker, 2008). When both spouses are self-employed the conditions might also create synergies which encourage a harmonious situation within the household (Litsardopoulos and Saridakis, 2022).

Nevertheless, marriage can also push women into being self-employed because of the additional home-caring responsibilities (e.g., conducting household chores, caring for children or elderly relatives), which are stereotypically allocated to women in a household (Patrick, Stephens and Weinstein, 2016; O'Neill and Jepsen, 2019). Self-employment can allow women with marriage-related household responsibilities greater flexibility to balance home and work. Patrick, Stephens and Weinstein, (2016) found that in comparison to unmarried women, married women are up to 1.9 times more likely to be self-employed. Additionally, they found that about 65.5 % of the self-employed women in their sample are married compared to only 52.3 % of women in salary employment that are married (Patrick, Stephens and Weinstein, 2016).

Furthermore, past research suggests that the trend of having lower rates of marriage can explain the lower rates of entry into self-employment for minority women (Taniguchi, 2002). Also, Wang and Parker (2014) found that the rate of marriage decline in the US can somewhat explain the slowing growth rates of self-employment for women. Families can also consider women's self-employment as an additional source of family income especially in an economic downturn. For example, a study by Cowling and Hayward (2000) suggests that women sometimes change from unemployment into self-employment in periods of economic downturns to be able to maintain a family income. Desai, Deshmukh and Pramanik (2021) found that in India, during the COVID-19 lockdown, the probability of unmarried women being in wage-employment increased quite considerably. Additionally, a US study finds that self-employed mothers may have been forced out of the labour force to undertake family caring responsibilities during the COVID-19 pandemic (Kalenkoski and Pabilonia, 2022).

Based on the above arguments, we propose that although hostile COVID-19 lockdown measures can have a negative effect on women self-employment rates,

the negative effects will be less for women that are married, compared to single women.

P5: Marriage moderates the effects of hostile lockdown policies on women self-employment rates, such that the negative effects of hostile policies are more likely to occur for women who are unmarried compared to those who are married.

Caring Responsibilities

Caring for children is considered to also push women into being full-time self-employed (rather than into full-time wage-employment) due to the higher levels of burden that women with children have as caregivers. For example, Patrick, Stephens and Weinstein (2016) suggest that 24.4 % of the women in self-employment (in their sample) have at least one child that is less than 5 years old in comparison to only 17.4 % for wage/salary employed women. Similarly, Noseleit (2014) suggests that having additional children tends to increase the likelihood of a woman becoming self-employed. Therefore, having children is considered to have a significant positive effect on the likelihood that a woman becomes self-employed rather than being salary/wage employed — however, the effects do not seem to be significant for men (Boden, 1999). Self-employment may also offer women the opportunity to be home-based when they have childcare responsibilities (Craig, Powell and Cortis, 2012). As such, considering the above points, we argue that although hostile COVID-19 lockdown measures may have negative effects on women self-employment rates, we expect that the negative effects will be less for women that have children since they may be more motivated to stay in self-employment or go into self-employment despite the lockdown effects. Consequently, we put forth the following proposition:

P6a: Caring responsibilities moderate the effects of hostile COVID-19 lockdown policies on women full-time self-employment rates, such that the negative effects of hostile policies are more likely to occur for women that do not have children as compared to women that have children.

Also, the choice of full-time compared to part-time employment is influenced by social positionality (Martinez Dy and Jayawarna, 2020; Villares-Varela, 2018; Berry and Bell, 2012). This is because non-monetary benefits are often considered as substitute compensation for lower economic returns, such as part-time working (Martinez Dy and Jayawarna, 2020), which is especially attractive to women because they carry the greatest burden of caring responsibilities (Watson and Pearson, 2016). This suggests that women with caring responsibilities may be more inclined to take up part-time self-employment as compared to full-time self-employment. In this context, we argue that even though lockdown policies could negatively affect women self-employment rates with caring responsibilities, the negative impact will be less for part-time self-employment rates when compared to full-time work, since part-time is more attractive for women with caring responsibilities. These arguments suggest that:

P6b: The negative effects of hostile COVID-19 lockdown policies are more likely to negatively affect the self-employment rates of women with caring responsibilities that have full-time self-employment compared to women with caring responsibilities that have part-time self-employment.

2.3.4. Path D: Economic Development Factors as Moderators in the Relationship Between Hostile COVID-19 Policies and Women Self-employment Rates

In this section, we argue that the impact of hostile COVID-19 policies on women self-employment rates is likely to be affected by economic development factors. These are: differences between countries in the levels of human development (ADB, 2016), the capacity of government to respond with income support measures (OECD, 2020a), the size of the informal sector in an economy (ADB, 2016) and informal cross border trade (World Bank, 2022; World Bank and WTO, 2018) — all of which can have important implications for women self-employment in crisis periods.

Human Development

Countries differ in their levels of human development (ADB, 2016), and human development has strong implications for enhancing the capability of people in a country to increase the new business entry rates (Acs, Armington and Zhang, 2007), including the entry rates of women in entrepreneurship (Maniyalath and Narendran, 2016). During crisis periods, resilience is about the capability of a business to adapt, survive, and grow in such periods (Fiksel, 2006). Flexible small businesses are especially able to respond to exogenous shocks through innovation relative to large businesses (Williams and Vorley, 2014). In this context, creating an enterprising society that fosters innovation requires investment in human development (Bradley et al., 2012; Rodriguez-Pose and Palavicini-Corona, 2013).

Human development refers to the capabilities that people possess (Gries and Naudé, 2011). In turn, capabilities refer to people's capacity to carry out certain functions (Gries and Naudé, 2011), such as creating a new innovative business (Slesman, Abubakar and Mitra, 2021). Thus, expanding the human development level in a country means expanding their capabilities to carry out certain functions (Gries and Naudé, 2011). Essentially, what is important is that people in a country have the level of human development, that is, the capabilities, to be able to achieve their goals (Robeyns, 2003). From an entrepreneurship perspective, this is about the capability of people in an economy to increase the rate at which new innovative businesses are created (Slesman, Abubakar and Mitra, 2021). For example, some studies suggest that human development-related variables (especially human capital) are important for new firm formation rates and survival (Acs, Armington and Zhang, 2007). For female entrepreneurship in

particular, a study by Maniyalath and Narendran (2016) suggests that human development positively influences the female entrepreneurship rate.

Although human development is important for female entrepreneurship rates (Maniyalath and Narendran, 2016), countries vary in their level of human development, depending on whether they are: low-income, middle-income or high-income economies (ADB, 2016; Slesman, Abubakar and Mitra, 2021). Low-income countries have the lowest levels of human development (ADB, 2016) and are also considered to be the least innovative countries (Acs, Szerb and Autio, 2016). Thus, these countries have limited capability to create new innovative businesses (Slesman, Abubakar and Mitra, 2021). Middle-income countries tend have higher levels of human development than low-income countries (ADB, 2016). High-income countries on the other hand are considered to have the highest levels of human development (ADB, 2016), and are typically regarded as innovation-driven countries that can create innovative new businesses (Acs, Szerb and Autio, 2016).

Consequently, it is possible to argue that although hostile COVID-19 policies may negatively affect women self-employment rates, the level of human development in a country moderates the relationship, such that the negative impact is more likely to be experienced by low-income countries (due to their lower levels of human development and therefore lower capabilities for creating innovative new businesses that can survive the crisis) in comparison to high-income countries (which have higher levels of human development and a greater capacity to create innovative new businesses that can survive the crisis). Thus, we propose the following:

P7: The level of human development in a country moderates the effects of hostile COVID-19 lockdown policies on women self-employment rates, such that the negative effects of lockdown policies are more likely to occur in countries where the levels of human development are low compared to countries with higher levels of human development.

Income Support Measures

Another factor related to the level of economic development in a country is the capacity of governments to provide income support channels, with distinct differences between the high-income, middle-income or low-income countries (OECD, 2020a). Scholars have suggested that government income support measures are important for enhancing the resilience of the self-employed (OECD, 2020a). Such policy measures are essential for the resilience of self-employed women, even if they are not specifically targeting women's self-employment rates. Hence, we argue that these marked differences in income support measures may have important implications for the resilience of women in business and their self-employment rates during the COVID-19 pandemic.

High-income countries put in place several support programmes focusing on the self-employed. In contrast, as OECD (2020a) notes, middle-income and the lower income countries focused their support programmes on the informal

economy workers. The support programmes in middle-income and low-income countries that focused on informal workers tended to provide them with cash transfers that were targeted to people whose incomes were affected directly by lockdown measures, but who were not receiving support from other welfare programmes (OECD, 2020a). Moreover, in some countries, the cash transfers were also supplemented by public work programmes that were temporary (OECD, 2020b). However, vast differences exist between countries at different levels of development in income support measures. Accordingly, the OECD Country Policy Tracker suggests that while 70 percent of the high-income countries covered by their Policy Tracker implemented support programmes that are targeted at the self-employed or informal workers, in contrast, only two low-income countries in their sample had deployed support programmes, mainly for informal workers (OECD, 2020c). This suggests that while high-income countries had many income support programmes, the less developed countries, especially low-income countries, implemented very few programmes to formally support the self-employed. Therefore, we propose the following:

P8: Income support measures for the self-employed moderate the effects of hostile COVID-19 lockdown policies on women self-employment rates, such that the negative effects of lockdown policies are more likely to occur in countries where the income support measures for the self-employed are low, compared to countries with higher levels of income support for the self-employed.

Size of Informal Sector

Thirdly, another possible moderating factor related to the level of economic development is the size of the informal sector, which varies among high-income, middle-income or low-income countries (ADB, 2016). The global workforce is made up of around 3.3 billion, out of which 2 billion workers (i.e., approximately 62 percent) are involved in the informal sector (Lee, Schmidt-Klau and Verick, 2020). Compared to men, women are more likely to operate informal micro/small businesses in low-return sectors (Abebe, Bundervoet and Wieser, 2020). Low-income countries have the largest informal sectors (ADB, 2016), followed by middle-income countries (ADB, 2016), while high-income countries have the smallest informal sectors (ADB, 2016). Therefore, we argue that the size of the informal sector is also a moderator of the effects of hostile COVID-19 policies on women self-employment rates. This is because generated unemployment due to economic shocks is not only one of the key determinants of self-employment rates in a country, but it especially impacts those in the informal sector (Fossen, 2020).

Unemployment is viewed as a determinant of self-employment because during periods of adverse market conditions (e.g., economic downturn) people find it difficult to secure paid employment. Fossen (2020) classifies self-employed individuals into those starting unincorporated (i.e., informal businesses) and incorporated businesses (i.e., formal businesses), where the formal ones are considered to be the more innovative ones. Therefore, it is

logically expected that during the COVID-19 crisis women's self-employment rates would be influenced by increased unemployment, and that differences in the size of the informal sector of the economy among countries will moderate the association.

For low-income countries, where informal sector self-employment and necessity entrepreneurship are more prevalent (Acs, Desai and Hessels, 2008), we expect that the unemployment caused by the COVID-19 crisis increases the tendency of women to substitute salaried-job losses in the formal sector with *informal sector* self-employment. For high-income countries with greater income support measures (OECD, 2020a), and where the informal sector self-employment and necessity entrepreneurship are relatively low (Acs, Desai and Hessels, 2008), we expect the unemployment caused by the COVID-19 crisis to increase the tendency of women to substitute salaried-job losses in the formal sector with *formal sector* self-employment. These arguments lead to the following two propositions:

P9: Informal sector size moderates the effects of hostile policies on informal sector self-employment rates for women, such that the unemployment caused by hostile COVID-19 lockdown policies to women in salaried formal jobs, is more likely to influence informal self-employment in lower-income countries, compared to countries with higher levels of income.

P10: Informal sector size moderates the effects of hostile policies on formal sector self-employment rates for women, such that the unemployment caused by hostile COVID-19 lockdown policies to women in salaried formal jobs, is more likely to influence formal self-employment in higher-income countries, compared to countries with lower levels of income.

Informal Cross-border Trade

Fourthly, informal cross-border trade represents a much higher proportion of the domestic economy in developing countries relative to the economies of developed countries (ADB, 2016; World Bank and WTO, 2018). Therefore, in the less developed countries, such as the lower-income economies, the livelihoods of many communities such as those along the African borders (i.e., low-income countries), depend on trading activities in which the majority of the businesses are unregistered small-scale traders (World Bank, 2022; World Bank and WTO, 2018). Estimates suggest that around 40% of regional trade is from the informal cross-border trade which plays a major role in the African economic and social landscape (World Bank and WTO, 2018). However, due to the COVID-19 pandemic a number developing countries enforced restrictive lockdown-related trade measures. Some of the countries implemented export bans, enforced export licensing requirements, some allowed transportation of essential goods, aid, and relief cargo whilst other countries restrained transportation through the closure of all borders (World Bank and WTO, 2018).

Considering that informal cross-border trade flows of agricultural products play a major role in ensuring food security, the enforcement of the lockdown measures resulted in severe shortages of essential goods distributed from across the border. The shortages were exacerbated by the stockpiling of goods by people who could afford them, which threatened to hamper food security in border communities and increased poverty. These adverse conditions were particularly experienced in remote villages where communities depend heavily on food items supplied through informal channels (World Bank and WTO, 2018). Consequently, because women make up a proportionally large share amongst informal traders in a number of low-income countries, coupled with the loss of income opportunities as a result of the halt of productive activities, several women traders were disproportionately impacted by the economic losses from unsold goods, many of which were discarded due to their perishable nature (World Bank, 2022; World Bank and WTO, 2018). WTO (2020) also notes that women were more negatively impacted by the COVID-19 trade disruptions than men in the less developed countries. This was because several women work in sectors and businesses that were heavily affected by the COVID-19 pandemic, which increased women's risks to trade disruptions brought on by the pandemic (WTO, 2020).

These negative effects on informal cross-border trade can be reduced through the implementation of support programmes by governments. However, unlike high-income countries which offer more support programmes for the self-employed or informal workers, most low-income countries offer less support programmes for the self-employed or informal workers (OECD, 2020c). The above arguments lead to the following propositions:

P11: Informal cross-border trade moderates the effects of hostile COVID-19 lockdown policies on women self-employment rates, such that the negative effects of lockdown policies are more likely to occur in countries where informal cross-border trade is high (especially lower-income countries), compared to countries with lower levels of informal cross-border trade (especially high-income economies).

P12: Hostile COVID-19 lockdown policies are more likely to have a significant negative impact on the self-employment rates of women that are involved in informal cross-border trading in comparison to the self-employment rates of men that are involved in informal cross border trading.

3. Conclusion

This study addresses the need for a conceptual framework that evaluates the effects of government COVID-19 policies on women self-employment rates, and the factors that moderate the relationship. This process commenced by reviewing the literature on the vulnerability and resilience of micro/small businesses in order to formulate/develop the conceptual framework. The institutional theory was

employed to understand the factors that may affect the resilience and/or vulnerability of self-employed women and assist in the development of the framework. Institutions or policies were assumed to either have a negative or a positive impact on entrepreneurial activities (Abubakar et al., 2019; Slesman, Abubakar and Mitra, 2021). These policies were then classified into hostile lockdown policies and non/less-hostile policies (Setyawan and Lestari, 2020; Greenstone and Nigam, 2020).

3.1. Implications for Theory

The theoretical relationships of our arguments contribute to the literature on women self-employment (Saridakis, Marlow and Storey, 2014; Patrick, Stephens and Weinstein, 2016) by developing an original ‘integrated framework’ for studying the effects of pandemic/epidemic-related government policies on women self-employment rates and the moderating role of social and economic factors (see Figure 1). Twelve propositions were developed based on *hostile and non-hostile policies* (Setyawan and Lestari, 2020; Greenstone and Nigam, 2020), *social factors* such as marriage (Treanor and Marlow, 2021) and caring responsibilities (Boden, 1999; Noseleit, 2014); and *economic development factors* such as human development (Maniyalath and Narendran, 2016), income support measures (OECD, 2020a), the size of the informal sector (ADB, 2016; OECD, 2020a) and informal cross border trading (World Bank and WTO, 2018). It must be noted that while comprehensive in its coverage, certain factors or ‘controls’, which may positively or negatively affect women self-employment rates were not covered as they are beyond the scope of the paper. Three propositions were formulated under hostile lockdown policies, which stated that the self-employment rates of women were more likely to be negatively affected than the self-employment rates of men. Less/non-hostile policies were less prone to having a negative impact on women self-employment rates as compared to the effect of hostile policies.

Regarding social factors, it was argued that marriage and caring responsibilities moderate the effects of hostile lockdown policies. Specifically, the negative effect of hostile policies is more likely to occur for unmarried women and childless women. This is likely because marriage and children tend to push women into self-employment due to additional home-caring responsibilities (Boden, 1999; Patrick, Stephens and Weinstein, 2016), and self-employment can give married women greater flexibility to balance household responsibilities and work (Patrick, Stephens and Weinstein, 2016).

For the economic development factors, it was argued that human development had a moderating effect on hostile policies in that the negative effect of these policies was more dominant in countries with low levels of human development. This is because lower levels of human development (ADB, 2016)

and the accompanying lower capacity for creating innovative new businesses, result in businesses that are less likely to survive the crisis (Slesman, Abubakar and Mitra, 2021).

Similarly, we proposed that income support measures for the self-employed moderate the effects of hostile policies by heightening the negative effects of the policy in countries where there were less income support measures in place. This is because, while high-income countries had several income-support programmes, the less developed countries, especially low-income countries, implemented very few programmes to support the formal self-employed (OECD, 2020c). Also, we argued that the unemployment caused by hostile policies to women in salaried formal jobs are more likely to influence formal self-employment in higher-income countries, compared to countries with lower levels of income. This is likely because informal sector self-employment and necessity entrepreneurship are more prevalent in low-income countries and formal entrepreneurship is more common in higher-income countries (Acs, Desai and Hessels, 2008; Laing, Van Stel and Storey, 2022).

3.2. Implications for Government Policy

The propositions developed in this study suggest some potential policy implications. Firstly, hostile COVID-19 policies are likely to have greater negative effects on women self-employment rates as compared to men. This implies that government policy makers may need to provide more support to women in self-employment to ensure the survival of women-owned small businesses, especially because women carry the additional burden of raising children. Secondly, hostile COVID-19 policies are more likely to have negative implications for self-employed women who live in lower-income countries, relative to those in high-income countries, because of the greater support measures in high-income countries. This suggests that policymakers in low-income countries need to try and find creative ways of providing additional support to self-employed women in order to cushion the negative effects of the policies. Thirdly, self-employed women located in countries with lower levels of human development are more likely to be hit harder by hostile COVID-19 policies. This suggests that training and other human capital development programmes on how to survive lockdown periods are particularly important in countries with lower levels of human development. Further, the policies must be accompanied by coordinated efforts that are sensitive to families and individual-specific needs as identified in this study. To better incorporate the policy responses, it is essential that official statistics are available to address the intersectional impacts of the pandemic on self-employed women. It is important that the policies implemented take into consideration the different aspects of self-employment revealed in this study so that the strategies and policies being put

forward can adapt to various country-specific dimensions. Future research should focus on these dimensions and augment existing conceptual frameworks to develop innovative methodologies which could further evaluate the impact of COVID-19 on self-employed women.

3.3. Limitations and Implications for Future Research

This research has certain limitations. First, the focus of the paper is mainly on women self-employment rates. Therefore, future research can focus on conceptualizing the effects of COVID-19 policies on the self-employment rates of men. Secondly, although novel and supported with references, the propositions developed in this paper have not been tested empirically. Therefore, future research should develop testable hypotheses based on our propositions, collect appropriate data, and empirically test the hypotheses, in order to gauge the extent to which the ideas developed in this paper are supported by empirical data. Thirdly, we only focused on social and economic factors as moderators of the relationship between COVID-19 policies and women self-employment rates. As such, there may be other moderators of the relationship, which are currently unexplored in this study and which future research can investigate.

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