Beyond the formal/informal enterprise dualism: explaining the level of (in)formality of entrepreneurs

Abstract

Rather than portray formal and informal sector entrepreneurs as discrete groups, an emergent scholarship has conceptualized a continuum from wholly formal to wholly informal entrepreneurs. The aim of the paper is to advance a degree of (in)formality approach by evaluating whether the institutional determinants found to explain whether an enterprise is formal or informal are also valid when explaining the level of (in)formality of enterprises. To do so, a 2017 survey of 500 retail micro-enterprises in the city of Lahore in Pakistan is reported. The finding is that higher levels of formality are more significantly associated with individual-level characteristics of the entrepreneur and enterprise, such as educational level and sales, than with formal and informal institutional conditions, as proposed by institutional theory. The paper thus concludes by offering new theoretical implications and exploring some innovative policy measures to tackle informal entrepreneurship.

Keywords: entrepreneurship, informal sector, micro-enterprise, Pakistan, Asia

Introduction

Over the past decade or so, informal entrepreneurship has become a prominent sub-stream of entrepreneurship scholarship (Ferreira et al. 2019). This is in recognition that two-thirds of global enterprises start-up unregistered (Autio and Fu, 2014) and over half of enterprises globally are unregistered (Acs et al. 2013), with an even higher proportion operating in the informal sector if the uncalculated number of formal enterprises under-reporting sales is included (Williams 2018). Indeed, tackling informal entrepreneurship is now a high priority for supra-national agencies and governments across the globe (European Commission, 2007; ILO, 2014; OECD, 2015). This is due to the resultant public revenue losses, the unfair competition they pose to formal enterprises (Distinguin et al., 2016) and the recognition that formalizing such enterprises is needed to achieve economic development and growth (Demenet et al., 2015; Gurtoo and Williams, 2009).

Recently, scholars adopting institutional theory have explained informal entrepreneurship to result from the asymmetry between the laws and regulations that constitute the formal institutions and the norms, values and codes of conduct of the informal institutions in a society (De Castro, Khavul, and Bruton 2014; Webb et al. 2009; Williams and Vorley 2014). The greater the incongruence between formal and informal institutions, the more entrepreneurs operate in the informal sector. However, entrepreneurs are not either formal or informal. There is a continuum of entrepreneurs and enterprises from wholly formal to wholly informal (de Villiers Scheepers et al 2014; Williams & Martinez 2014). Some may be wholly unregistered and not declare any earnings. Others, however, may be registered with some authorities but not with others (e.g., the tax authority but not for the purposes of health and safety, labour law or social insurance contributions), not keep business accounts separate from their personal accounts, and may declare some or all of their earnings. Others may be wholly formal. To advance this degree of informality approach, the aim of this paper is to evaluate the characteristics of entrepreneurs and enterprises at various levels of informality and the determinants of their level of informality.

In doing so, this paper advances scholarship on informal entrepreneurship in three distinct ways. Firstly, and theoretically, the paper transcends the binary classification of entrepreneurs and enterprises as either formal or informal, by adopting a degree of informality approach, and explains why some entrepreneurs are variously positioned along such a spectrum. Institutional theory is advanced by examining whether higher levels of formality are associated with lower levels of formal and informal institutional asymmetry. Second, and empirically, the contribution is to report a survey of the degree of informality of enterprises which evaluates the validity of the determinants considered important in institutional theory. And third, and from a policy perspective, it formulates the tailored policy initiatives that can be targeted at different levels of informality to help enterprises transition towards formality.

To achieve this, the next section reviews the range of personal and enterprise characteristics, as well as formal and informal institutional factors, used to explain informal entrepreneurship, in order to consider whether they might also explain the level of informality of entrepreneurs and enterprises. To evaluate this, the third section describes the

data used, namely a 2017 survey of 500 micro-enterprises operating in the retail sector of Lahore in Pakistan and the multivariate staged ordered logistic regression analysis and post-estimation exercises used. The fourth section then reports the results followed in fifth and final section by the theoretical and policy implications, along with the limitations of the study and future research required.

Entrepreneurship and the informal sector: A review

Shades of Grey: towards a continuum of (in)formality

Until now, much of the literature has treated formal and informal entrepreneurs as discrete groups. Viewing this through the lens of what Derrida (1967) terms 'binary hierarchy' thought, scholars have separated informal entrepreneurs from 'mainstream' formal entrepreneurs and normatively depicted informal entrepreneurship as negative and formal entrepreneurship as positive (e.g., ILO, 2014).

In recent years, however, there has been recognition of a spectrum of entrepreneurship and enterprises ranging from the wholly informal to wholly formal (e.g. Chen 2012; Welter and Smallbone 2009; Williams et al., 2013). In a qualitative study of informal entrepreneurs in the Dominican Republic, De Castro et al. (2014) identify how many entrepreneurs comply with some regulations but not others, as do De Mel et al. (2013) in their study of Sri Lankan entrepreneurs. In a study of 45,000 small and micro firms in Indonesia, Rothenberg et al. (2016) find that many firms had partially completed the registration process, taking some steps towards formalization but not others. A study of 300 micro-enterprises in an urban area of Pakistan, meanwhile, reveals that two in five enterprises surveyed were neither wholly formal or wholly informal but somewhere in-between (Williams and Shahid 2014). Nevertheless, the characteristics of enterprises and entrepreneurs operating at different levels of (in)formality remains unknown, as do the determinants of their level of (in)formality.

Characteristics of entrepreneurs and enterprises at varying levels of informality

Recent years have seen advances in understanding the characteristics of informal entrepreneurs. Both relatively younger and relatively older entrepreneurs are more likely to operate informally (Asian Development Bank, 2010; Federal Board of Revenue of Pakistan, 2008; Gennari, 2004; Williams and Martinez, 2014), as are those higher levels of education (Gurtoo and Williams, 2009; Kemal and Mahmood, 1998). Women are more likely to start up and operate informally than men (Mumtaz and Saleem, 2010), as are lower income populations (Ahmad, 2008), although this depends on the social protection available (Williams, 2014). They are also more often necessity-driven compared with formal entrepreneurs (Williams *et al.,* 2015) and less likely to view registration as providing benefits (Hamid and Iqbal, 2012).

Meanwhile, older enterprises are more likely to be formal (Thai and Turkina, 2014; Williams and Martinez, 2014), and informality more prevalent in the retail, trading and construction sectors (Asian Development Bank, 2010; Chaudhry and Munir, 2010; Gurtoo and Williams, 2009; ILO, 2012; Kemal and Mehmood, 1998). Smaller enterprises are more likely to be informal (Rothenberg et al., 2016), as are those without a business bank account (Williams et al., 2015). Those who perceive competitors to be more likely to operate informally are also more likely to operate informally themselves, reflecting that horizontal trust is an important determinant (Williams, 2018). Whether these similarly apply when analyzing varying levels of informality is so far unknown.

Explaining levels of informality

There has also been progress regarding the reasons for operating informally. Conventionally, an 'exclusion' perspective argued that an increase in outsourcing and subcontracting by large organizations to reduce production costs, coupled with low social protection, resulted in informal entrepreneurial endeavor as a survival strategy and last resort (Chen, 2012; ILO, 2014). Recently, however, an 'exit' perspective has emerged (De Soto, 1989, 2001). This views informal entrepreneurship as a voluntary endeavor driven by high tax rates (Arby, 2010; Kemal, 2007), public sector corruption (Ahmed, 2009; Buehn & Schneider, 2012), over-regulation (De Soto, 1989; Kemal, 2007) and resistance and resentment toward government due to the lack of procedural and redistributive justice and fairness (Ahmed, 2009; FBR, 2008; Torgler, 2011). More recently, institutional scholars have identified additional drivers. These include the existence of formal institutional voids (Webb et al., 2013), such as poor quality government (Kemal, 2007), and the asymmetry between formal and informal institutions (Muhammad *et al.,* 2017; De Castro et al., 2014; Siqueira et al., 2014; Thai & Turkina, 2014; Webb et al., 2009, 2013; Williams and Shahid, 2014; Williams et al., 2015).

With the exception of a quantitative study by Williams et al. (2015), no known study has attempted to enumerate either the characteristics of entrepreneurs and enterprises at varying levels of (in)formality, or to explain the differing levels of (in)formality amongst entrepreneurs. The intention here is to fill this void.

Methodology

In Pakistan, the informal sector is 33.5% of GDP (Schneider and Williams, 2013) with nearly three quarters (73%) of the workforce having their main jobs in informal sector enterprises (Williams, 2015; ILO, 2012). In the retail and wholesale sector of Pakistan, the sectoral focus of this study, 85% of workers are in informal employment (Gennari, 2004). Indeed, formalizing this sector has been a high priority in Pakistan, but with little success, not least due to a lack of an evidence-based understanding.

Data

To gather data, face-to-face interviews were conducted in either Urdu, or in the widely spoken local dialect of Punjabi, by one of the authors who is a native speaker of both. Interviews lasted 30-40 minutes. Following a pilot study of 30 micro-enterprises in January 2017, the main survey took place between February 2017 and May 2017, culminating in 500 respondents.

To select participants, maximum variation sampling was used (Adom and Williams 2012). Firstly, the city of Lahore was divided into three geographical zones and 20 markets selected within these three geographical zones, based on the size and reputation of the market, and the number of retail micro-enterprises. In this way, our sample includes a fair representation of both medium- and large-sized wholesale markets, as well as retail markets specializing in a diverse range of products. Within each market, maximum variation sampling was also employed to ensure a variety of retail entrepreneurs (in terms of products). Table 1 highlights our sampling frame.

Table 1: Sampling Frame of 20 Retail and Wholesale Markets of Lahore, Pakistan

Geographical Zone	No of Markets Surveyed	Type of Market(s)	Types of Product(s)	No. of Entrepreneurs Surveyed
Zone 1	7	Medium- and large-size commercial hubs	Clothing, Footwear, Jewelry, Home Décor	105
Zone 2	5	Large-sized wholesale and retail market(s)	Clothing, Footwear, Cosmetics, Home Décor, Handicrafts, Electronics, Car Accessories and Spare Parts, Imported Used Items, Books, Dry Fruit and Condiments	225
Zone 3	8	Medium-size neighborhood markets	Clothing, Footwear, Women's Accessories, Toys, Gifts, Books, Stationary, Grocery, Bakeries	170
			Total	500

Variables

Dependent variable

Drawing upon the 15th and 17th International Conferences of Labor Statisticians (ICLS), informal sector enterprises are defined as small or unregistered unincorporated private enterprises (Hussmanns, 2005). An informal micro-enterprise in Pakistan is therefore here defined as a private enterprise employing under ten employees which is either: not constituted as a separate legal entity independent of its owner; not registered with the tax authorities; not registered

with the labor department for documenting its workers and/or no formal accounts are kept enabling a financial separation of the enterprise from ts owner/s (Federal Board of Revenue of Pakistan, 2008; ILO, 2011, 2012). Four variables, therefore, are used to construct an index of the level of informality of an enterprise, namely: (1) its legal status (i.e., whether incorporated or not); (2) its tax registration status; (3) its labour registration status; and (4) the type of accounts kept.[1] The outcome is a five-point scale of the 'level of informality' (see Table 2).

Table 2: Decision matrix of the degree of (in)formality

	Decision Matrix – Degree of (in)Formality				Distribution by option (%)	Score	Distribution by score (%)
	Legal Status	Registration with Tax dept	Registration with Labour dept	Formal Account Keeping			
Totally Formal	✓	✓	✓	✓	1.7	0	1.7
Highly Formal						1	10.9
	✗	✓	✓	✓	8.3		
	✓	✗	✓	✓	0		
	✓	✓	✗	✓	0.9		
	✓	✓	✓	✗	1.7		
Somewhat Informal						2	20.4
	✗	✗	✓	✓	0		
	✗	✓	✗	✓	4.3		
	✗	✓	✓	✗	15.1		
	✓	✗	✗	✓	0.5		
	✓	✗	✓	✗	0		
	✓	✓	✗	✗	0.5		
Highly Informal						3	39.5
	✓	✗	✗	✗	0.7		
	✗	✓	✗	✗	35.8		
	✗	✗	✓	✗	2.1		
	✗	✗	✗	✓	0.9		
Totally Informal	✗	✗	✗	✗		4	27.5

Source: Lahore Enterprise Survey (2017). Authors' own calculations.

Independent variables

As Figure 1 displays, and drawing on the literature review, the multivariate analyses are based on a series of additive ordered logistic regressions where firstly, entrepreneurs characteristics are examined at various levels of informality, secondly, the characteristics of enterprises, thirdly, market characteristics, fourthly, informal institutional factors and

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[1] Results of principal component factor analysis applied to the four variables used to construct the informality index (see Table A.1 in the appendix) indicate that the four indicators contribute almost equally to the underlying index of informality. Thus, the four indicators are given equal weight in the index.

finally, formal institutional factors. This enables their individual and net influences on the level of informality to be analyzed.

Figure 1: Theorectial model for the level of (in)formality
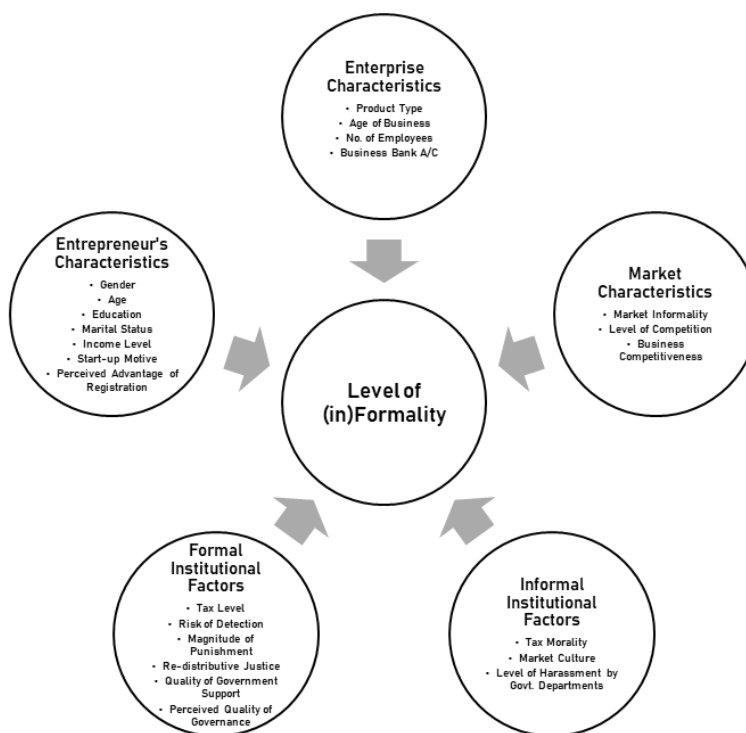
In Model 1, and drawing upon the literature review, the following characteristics of entrepreneurs are examined:
- Gender: a dummy variable with value 0 indicating that the entrepreneur is a man and 1 a woman.
- Age: a categorical variable with six categories for those aged 18-24, 25-34, 35-44, 45-54, 55-64, and over 65 years old.
- Education: a categorical variable of their highest educational level with five categories of no formal education, primary, secondary, college and university education.
- Marital status: a dummy variable with value 0 for married entrepreneurs and value 1 for single entrepreneurs.
- Income (from sales): a categorical variable measuring the total monthly income from sales in six categories: less than 50,000, 50,000-100,000, 100,000-150,000, 150,000-200,000, more than 200,000, and not reported income.
- Start-up motive: a categorical variable with seven categories gathering the self-reported reasons for starting-up the enterprise. These are: no other option to make a living, could not get a salaried job, better and more profitable than a job, prefer to be my own boss, a family tradition, need extra income to support expenses, and always passionate about starting my own business.
- Perceived advantage of registration: a dummy variable with value 0 for those entrepreneurs reporting perceived advantages from registration and 1 for those who answered no perceived advantages.

In Model 2, and again based on the literature review, the following enterprise characteristics are examined:
- Product type: a categorical variable with eighteen categories for the main product the enterprise deals with (see Table 3 below). In addition, an indicator for those enterprises not reporting their product is included.
- Age of business (and age squared): a continuous variable measuring the number of years since the business was started (and its squared transformation). For those enterprises, not reporting this information the average firm's age is assumed to deal with the missing cases.
- Number of employees: a categorical variable with four categories for business with 1 to 5 employees, 6 to 10, more than 10, and a final category for those not reporting this information.

- Bank account: a dummy variable with value 0 when the entrepreneur has a bank account in the name of the business and 1 otherwise.

In Model 3, the following variables reflecting the characteristics of the market in which the enterprise operates are included:

- Perceived level of market informality: a continuous variable for the self-reported level of informality in the market in which the enterprise operates.
- High level of competition: a dummy variable with value 0 for those reporting that high competition is one of the main difficulties they face in running their business and 1 otherwise.
- Business competitiveness: a categorical variable for whether the business competitiveness is affected by the presence of other unregistered firms in the market. Value 0 is for those who respond yes, value 1 for those who say no and value 3 for those who opt to answer they do not know.

In Model 4, variables are added measuring the level of formal and informal institutional asymmetry and the impact of the wider informal institutions:

- Tax morale: a likert scale categorical variable with value 1 if the respondent is of the opinion that it is "highly acceptable" to operate informally in Pakistan, value 2 if the opinion is "somewhat acceptable" to operate informally and value 3 if s/he believes to be "not acceptable" to operate informally. This measures the norms, values and beliefs of entrepreneurs regarding informality and therefore, the symmetry of their views with the laws and regulations of the formal institutions.
- Market culture: three categorical variables for the level of acceptance in the society of three widespread informal practices in Pakistan: hiring a worker with no formal contract, reporting lower sales in order to pay less taxes, and not issuing invoices or receipts for sales. The answer options are 1 for those who respond that is always seen as acceptable, 2 for those who say sometimes, 3 for those who say never, and a final indicator for those who do not report information when responding to any of the three variables.
- Harassment by government authorities: a dummy variable 0 for those who respond that they have felt harassed by government authorities when doing business and 1 otherwise.

Finally, Model 5 adds variables that measure formal institutional failures and imperfections:

- Tax level: a likert scale variable for their level of agreement with the following statement: "The level of taxation in Pakistan is appropriate" with value 1 for those who say they are very unsatisfied, value 2 for those reporting they are somewhat satisfied, and value 3 for those who report they are very satisfied. Finally, value 4 groups all missing cases in the variable.
- Risk of detection: a likert scale categorical variable with value 1 if the respondent believes it is very risky to operate informally, value 2 if s/he holds the opinion it is somewhat risky and value 3 if s/he believes it is not risky to operate informally. This measures the existence of the effectiveness and power of formal institutions.
- Magnitude of punishment: a categorical variable with six categories for the expected level of punishment when a company in the market is caught operating informally. 1 for nothing serious, 2 for a small fine, 3 for a heavy fine, 4 for a fine with punishment, 5 for a complete shutdown of business, and 6 grouping those missing cases in the variable.
- Redistributive justice: a Likert scale variable for the level of agreement with the following statement: "I think the Pakistani government consumes its taxes in a fair and an appropriate manner" with value 1 for those who say they are very unsatisfied, value 2 for those reporting they are somewhat satisfied, and value 3 for those who report they are very satisfied. Finally, value 4 groups all missing cases in the variable.
- Quality of government support: a Likert scale variable for the level of agreement with the following statement: "I think the Pakistani government provides sufficient support to small businesses" with value 1 for those who say they are very unsatisfied, value 2 for those reporting they are somewhat satisfied, and value 3 for those who report they are very satisfied. Finally, value 4 groups all missing cases in the variable.
- Perceived quality of governance: a Likert scale variable for the level of agreement with the following statement: "I think the performance of various government departments (particularly the tax and labour departments) is satisfactory" with value 1 for those who say they are very unsatisfied, value 2 for those reporting they are somewhat satisfied, and value 3 for those who report they are very satisfied. Finally, value 4 groups all missing cases in the variable.

Methods

As the dependent variable is an ordinal one, ordered logistic regression is used, which is preferable to using a simple OLS technique since the assumptions of a non-interval variable would be violated and multinomial regression in which case the information contained in the ordering of the dependent variable would be lost. Indeed, the Brant test to check

that the assumption of parallel regressions holds, reporting an insignificant χ^2 equal to 5.20 (prob>χ^2 0.46) for the full specification used in model 5.

To interpret the multivariate ordered logistic regressions reported, firstly, the determinants of the level of informality of enterprises in Lahore are analyzed and secondly, a representative enterprise using the modal and mean values of the variables used in the multivariate ordered logistic regression is analyzed, to report the predicted odds of the level of informality. A first post-estimation exercise provides evidence of the most and the least relevant drivers for the level of informality and a second gives the overall estimated probabilities for the level of informality of enterprises in Lahore.

Results

Descriptive Findings

As Table 3 displays, 27.5% of the surveyed enterprises in Lahore operate on a totally informal basis, 39.5% at a high level of informality, 20.4% per cent somewhat informally, 10.9% on highly formal basis, and 1.7% operate on totally formal basis. Therefore, 80.8% of the enterprises surveyed are neither wholly formal nor wholly informal but somewhere in the middle of the continuum. Indeed, for these retail micro-entrepreneurs, formality appears to progress in stages marked by firstly registering with the tax department, followed by registration with the labor department, then commencing formal account keeping, and lastly the incorporation of their business.

Nevertheless, and as Table 3 reveals, although very few women entrepreneurs were interviewed (3% of the sample), 14% operating on a wholly formal basis were women. Men, therefore, operate at higher levels of informality. So are older entrepreneurs more likely to operate wholly or highly informal enterprises, as are those with lower educational levels. As the highest educational level of the entrepreneur increases, the more likely they are to operate towards the formalized end of the spectrum. Likewise, single entrepreneurs are more likely to operate with greater degrees of formality than married entrepreneurs. Entrepreneurs passionate about starting their own business are also more likely to operate at greater levels of formality, whilst those who see no perceived advantages in registration are more likely to operate at higher levels of informality.

Table 3: Characteristics of entrepreneurs: by level of informality (%)

	Totally formal	Highly formal	Somewhat informal	Highly informal	Totally informal
All respondents	1.7	10.9	20.4	39.6	27.5
Entrepreneurs' characteristics					
Gender					
Man	85.7	100.0	98.8	95.8	97.4
Woman	14.3	0	1.2	4.2	2.6
Age					
18-24	57.1	24.4	16.7	13.2	12.2
25-34	42.3	17.8	30.9	30.7	33.0
35-44	0	33.3	22.6	30.1	31.3
45-54	0	15.6	15.5	15.1	20.0
55-64	0	6.7	9.5	7.8	3.5
65+	0	2.2	4.8	3.0	0
Highest education level					
No formal education	0	4.4	5.9	6.0	7.0
Primary	0	2.2	7.1	10.8	21.7
Secondary	14.3	28.9	29.8	35.5	35.6
College	42.9	46.7	36.9	28.9	28.7
University	42.9	17.8	20.2	18.7	7.0
Marital status					
Married	14.3	68.9	70.2	71.7	73.0
Single	85.7	31.1	29.8	28.3	27.0
Income (from sales)					
Less than 50,000	28.6	8.9	19.0	18.7	24.3
50,000 – 100,000	0	11.1	13.1	23.5	28.7
100,000 – 150,000	0	13.3	10.7	14.5	20.9

150,000 – 200,000	14.3	17.8	14.3	18.7	12.2
More than 200,000	57.1	37.8	29.8	21.1	11.3
Not reported	0	11.1	13.1	3.6	2.6
Start-up motive					
No other option to make a living	0	0	4.8	4.8	7.0
Could not get a salaried job	0	4.4	10.7	5.4	4.3
Better and more profitable than a job	28.6	15.6	7.1	16.9	19.1
Prefer to be my own boss	28.6	13.3	14.3	13.9	13.9
A family tradition	0	24.4	34.5	31.3	23.5
Needed extra income	0	8.9	9.5	12.0	15.6
Always passionate about starting my own business	42.9	33.3	19.0	15.7	16.5
Perceived advantage of registration					
Yes	85.7	80.0	71.4	50.6	21.7
No	14.3	20.0	28.6	49.4	78.3

Multivariate Analysis

To examine whether these results remain when other variables are introduced and held constant, Table 4 reports the results of an ordered logistic regression analysis. An additive strategy introduces sequentially the characteristics of entrepreneurs and enterprises, their motives and the wider formal and informal institutional compliance environment.

Model 1 reports the association between the characteristics of the entrepreneur and the level of informality. Given the small number of women in the sample, the gender coefficient is not significant. Neither is age or the marital status of the entrepreneur. However, entrepreneurs with higher levels of education (college or university) have higher levels of formalization, as do those with higher monthly sales income. Interestingly, the same result is found for entrepreneurs not reporting their income, intimating that those not reporting income are higher income earners. Moreover, entrepreneurs not perceiving any benefits of registration are significantly more likely to operate at higher degrees of informality although whether this is a post-hoc rationalization is not possible to ascertain from the data. Overall, the model 1 explains 12% of the variance in the level of informality as reported by the pseudo R^2 (compared with a model where no explanatory variables are introduced).

Model 2 adds the characteristics of the enterprise. Some of the entrepreneurs' characteristics in Model 1 change their significance level. For instance, younger entrepreneurs aged 25 to 34 are now significantly less likely to operate at higher levels of informality. In addition, education level appears not significant in Model 2 and the impact of not reporting sales income on the level of informality vanishes. With regards to firm characteristics, enterprises involved in the retailing of electronic goods (e.g., mobile phones, laptops, computers, battery chargers), and those not reporting their product type are significantly more likely to operate at higher levels of informality compared with other types of retailer. Moreover, enterprises with 6 to 10 employees are significantly less likely to operate at higher levels of informality than smaller enterprises, suggesting that a step-up in employment numbers enhances formalization. Finally, not having a business bank account is significantly associated with higher levels of informality. Encouraging retailers to open up a business bank account is therefore a key means of encouraging formalization. Overall, Model 2 explains around 23 per cent of the variance in the level of informality.

Model 3 adds the market characteristics. When an entrepreneur perceives a large percentage of businesses to be operating informally, and therefore there is a lack of horizontal trust, there is a significantly greater likelihood of a higher level of informality. No significant relationship exists with the other market characteristics. The overall fit of the model however, increases by 1% when market characteristics are added, from a pseudo R^2 of 23 to 24%.

Model 4 introduces the role of informal and formal institutional asymmetry in shaping the level of formalization of entrepreneurs. Contrary to contemporary institutional theory, no significant relationship is found between the level of formalization of entrepreneurs and their tax morale. However, a strong negative association exists between the perceptions that "hiring a worker without a formal contract" and "reporting lower sales" is acceptable and the level of formality. These informal and formal asymmetry factors increase the goodness of fit of the model by 2 percentage points to 26 per cent.

Finally, Model 5 presents the full specification adding formal institutional imperfections and failures. Entrepreneurs considering tax rates as unfairly high are significantly less likely to operate formally, whereas the perceived risk of detection significantly increases the odds of a higher level of formality, as does the possibility of a heavy fine. Finally, a perceived lack of redistributive justice significantly increases the odds of informality. None of

the other formal institutional factors analyzed are statistically significant. The overall fit of the model increases by an additional 4 per cent when these formal institutional factors are added, to a pseudo R^2 for the full model of 30 per cent.

Table 4: Ordered logistic regression for the determinants of the level of informality of enterprises in Lahore

Variables	(1) Model	(2) Model	(3) Model	(4) Model	(5) Model
Entrepreneur's characteristics					
Gender					
Male (RC)					
Female	0.37	0.69	0.74	0.57	0.53
Age					
18-24 (RC)					
25-34	0.48	0.73*	0.64	0.59	0.63
35-44	0.18	0.44	0.34	0.35	0.09
45-54	0.29	0.67	0.64	0.61	0.23
55-64	-0.32	0.11	-0.02	-0.09	-0.21
65+	-0.05	0.22	0.07	0.03	-0.04
Education					
No education (RC)					
Primary	0.36	0.27	0.26	-0.08	-0.02
Secondary	-0.34	-0.31	-0.32	-0.60	-0.51
College	-0.78**	-0.61	-0.64	-1.12***	-1.24***
University	-0.72*	-0.37	-0.24	-0.77*	-0.94*
Marital status					
Married (RC)					
Single	-0.07	0.01	-0.09	-0.04	-0.05
Income (from sales)					
Less than 50,000 (RC)					
50,000-100,000	0.14	0.29	0.30	0.41	0.25
100,000-150,000	0.03	0.43	0.38	0.35	0.29
150,000-200,000	-0.31	-0.18	-0.17	-0.16	-0.37
More than 200,000	-0.92***	-0.88**	-0.85**	-0.89**	-1.06***
Not reported	-1.31***	-0.70	-0.61	-0.60	-1.37**
Start-up motive					
No other option to make a living (RC)					
Could not get a salaried job	-0.37	0.12	0.15	0.39	0.17
Better and more profitable than a job	0.35	0.32	0.40	0.55	0.37
Prefer to be my own boss	0.01	-0.07	-0.08	0.11	-0.02
A family tradition	-0.04	0.12	0.08	0.24	-0.06
Need extra income to support expenses	-0.06	-0.19	-0.18	0.17	-0.11
Always passionate about starting my own business	-0.55	-0.17	-0.19	-0.04	-0.39
Perceived advantage of registration					
Yes (RC)					
No	1.48***	1.19***	1.09***	1.21***	1.29***
Enterprise characteristics					
Product type					
Clothing, Laces, Dying, Dry cleaning, or Stitching (RC)					
Interior decoration items (antiques, handicrafts, lamps, rugs, furniture, curtains, paintings, lighting, or paints)		-0.39	-0.29	-0.21	-0.24
Printing and/or binding services		-0.38	0.05	-0.29	-1.11
Jewellery, watches, or glasses		0.32	0.34	0.18	0.10
Books		-0.54	-0.55	-0.72	-0.83
Shoes		0.72	0.87	0.96*	1.07*

Food items, general store items, or pharmaceutical products	0.51	0.65	0.52	0.93*
Cosmetics	0.22	-0.01	-0.04	0.21
Flowers or wedding decoration items	0.77	0.69	1.08	1.67**
Toys, games, sports accessories, mobile accessories, Stationary, key chains or gifts shop items	0.39	0.33	0.37	0.35
Crockery and/or kitchenware	0.13	0.21	0.17	0.27
Bags or clutches	1.17	0.93	0.90	1.74
Music-related products	-0.40	-0.39	-0.50	-0.67
Photographic services	1.53*	1.04	1.15	0.88
Electronics, repair and /or spare parts	1.33***	1.25***	1.26***	1.24***
Animals	-0.03	-0.19	-0.36	-0.06
Real estate	-0.17	-0.33	-0.76	-1.00
Steel	0.35	0.42	0.06	0.27
Not reported	0.95**	0.82*	1.03**	1.04**
Age of business	0.00	0.01	0.02	0.02
Age of business (squared)	-0.00	-0.00	-0.00	-0.00
Number of employees				
1-5 (RC)				
6-10	-0.63*	-0.79**	-0.99**	-1.35***
More than 10	0.39	0.42	0.51	0.85
Not reported	-0.53	-0.61	-0.72*	-0.95**
Business bank account				
Yes (RC)				
No	2.15***	2.13***	2.21***	2.17***
Market characteristics				
Perceived level of market informality		0.01***	0.01***	0.02***
Competition level (high)				
Yes (RC)				
No		-0.18	-0.17	-0.16
Business competitiveness				
Yes (RC)				
No		0.22	0.10	-0.16
Don't know		0.44	0.25	0.08
Institutional asymmetry				
Tax morality				
Highly acceptable (RC)				
Somewhat acceptable			0.35	0.45
Not acceptable			0.23	0.50*
Market culture: hiring a worker without a formal contract				
Always (RC)				
Sometimes			-1.01***	-0.88***
Never			-0.86**	-1.01**
Not reported			0.46	-0.79
Market culture: reporting lower sales				
Always (RC)				
Sometimes			0.52*	0.22
Never			-0.04	-0.18
Not reported			1.06	2.89**
Market culture: not issuing receipts/invoices for the sales				
Always (RC)				
Sometimes			-0.15	0.01
Never			-0.39	-0.26
Not reported			-2.22	-4.93**

Harassment by government departments					
Yes (RC)					
No				0.02	0.05
Formal institutional factors					
Tax level					
Very unsatisfied (RC)					
Somewhat satisfied					-0.33
Very satisfied					0.25
Not reported					-4.31**
Risk of detection					
Very risky (RC)					
Somewhat risky					1.15***
Not risky					1.00***
Magnitude of punishment					
Nothing serious (RC)					
A small fine					0.16
A heavy fine					-1.08**
A fine with punishment					0.09
Complete shutdown of business					-0.82
Not reported					2.72***
Redistributive justice					
Very unsatisfied (RC)					
Somewhat satisfied					-0.79**
Very satisfied					0.23
Not reported					1.96*
Quality of government support					
Very unsatisfied (RC)					
Somewhat satisfied					0.61
Very satisfied					-0.91
Not reported					-0.23
Perceived quality of governance					
Very unsatisfied (RC)					
Somewhat satisfied					-0.33
Very satisfied					0.65
Not reported					0.80
Cut-off 1: Constant	-2.72***	0.81	1.28	1.04	0.74
Cut-off 2: Constant	-0.44	3.33***	3.84***	3.70**	3.61**
Cut-off 3: Constant	1.03	5.20***	5.73***	5.66***	5.78***
Cut-off 4: Constant	3.20***	7.87***	8.46***	8.48***	8.87***
Observations	417	417	417	417	417
Pseudo R^2	0.12	0.23	0.24	0.26	0.30

Overall, therefore, the characteristics of the entrepreneurs and enterprises predominantly explain the variance in the level of informality, whilst the formal and informal institutional asymmetry and perceived formal institutional imperfections provide relatively little added value. Table 5 takes the significant coefficients in Model 5 of Table 4 and examines how these characteristics affect the predicted probabilities for the odds of doing business at various levels of informality. The results confirm that the characteristics of entrepreneurs and enterprises have a larger impact on the odds of operating at various levels of informality than the market characteristics or the informal and formal institutional factors.

Table 5: Predicted probabilities for the odds of doing business at various levels of informality: by significant coefficients in model 5 (in percentages)

	Totally formal	Highly formal	Somewhat informal	Highly informal	Totally informal

	0.2	2.8	18.3	64.4	14.3
Pr (y | x)					
Entrepreneur's characteristics					
Education (RC: no education)					
College	0.6	7.1	36.8	54.5	1.0
University	0.4	6.3	33.0	55.2	5.1
Income (from sales) (RC <50,000)					
More than 200,000	0.4	6.7	34.6	54.6	3.7
Not reported	0.7	9.6	40.6	45.8	3.4
Perceived advantage of registration (RC Yes)					
No	0	0	0.7	69.7	29.6
Enterprise characteristics					
Product type (RC: Clothing, Laces, Dying, Dry cleaning, or Stitching)					
Shoes	0.1	0.9	7.1	59.7	32.2
Food items, general store items, or pharmaceutical products	0.1	1.1	8.2	61.4	29.3
Flowers or wedding decoration items	0.1	0.5	4.9	48.4	46.1
Electronics, repair and /or spare parts	0.1	0.9	7.3	60.4	31.3
Not reported					
No. of employees (RC 1-5 employees)					
6-10	0.6	9.2	40.1	46.9	3.1
Not reported	0.4	6.6	33.4	53.9	5.6
Business bank account (RC Yes)					
No	0	0	0	82.2	17.8
Market characteristics					
Share of market informality	0	0	0	77.7	22.3
Institutional asymmetry factors					
Tax morality (RC highly acceptable)					
Not acceptable	0.2	1.5	11.6	65.9	20.8
Market culture: hiring a worker without a formal contract (RC always)					
Sometimes	0.4	6	31.9	56.2	5.5
Never	0.5	6.9	34.4	53.2	5.0
Market culture: reporting lower sales (RC always)					
Not reported	0	0	0.5	24.9	74.6
Market culture: not issuing receipts/invoices for the sales (RC always)					
Not reported	18.8	61.6	17.6	2.2	0
Formal institutional factors					
Tax level (RC very unsatisfied)					
Not reported	11.2	57.8	26.5	4.5	0
Risk of detection (RC very risky)					
Somewhat risky	0	0	2.9	68.4	28.7
Not risky	0	0.3	5.4	66.6	27.7
Magnitude of punishment (RC: nothing serious)					
A heavy fine	0.5	7.4	35.6	51.9	4.6
Not reported	0	0	0.9	27.8	71.3
Redistributive justice (RC: very unsatisfied)					
Somewhat satisfied	0.4	5.6	30.4	57.4	6.2
Not reported	0.1	2.6	3.1	42.4	51.8

To graphically portray the strong association between the characteristics of the entrepreneur and enterprise and the level of informality, Figure 2 shows the predicted probabilities of operating at various levels of informality for a

representative entrepreneur in Lahore. This representative entrepreneur[2] is derived from the modal and mean values of the explanatory variables introduced in Models 1 to 5 of the ordered logistic regression. When only the entrepreneur characteristics are considered (Model 1), the representative entrepreneur has a probability of being totally informal of 25%, a 49% probability of being highly informal, 18% of doing business somewhat informally, 6% of being highly formal, and 0.8% of being totally formal. When the characteristics of a representative enterprise are added, there is a clear increase of the two most extreme scores of informality; 30% for totally informal and 56% for highly informal. The introduction of market characteristics in Model 3 does little to change these predicted probabilities. The inclusion of formal and informal institutional asymmetry factors and formal institutional failings intensifies the odds of the representative entrepreneur doing business informally. Thus, in the full specification of Model 5, the predicted probabilities are 56% for the representative entrepreneur operating totally informally, 40% for doing business highly informally, and 3% for operating somewhat informally. The scores for the two options of doing business formally have predicted probabilities below 1%.

Figure 2: Predicted probabilities for the odds of doing business at varying levels of informality for a representative entrepreneur, enterprise, market characteristics and informal and formal institutional factors (with 95% confidence intervals).
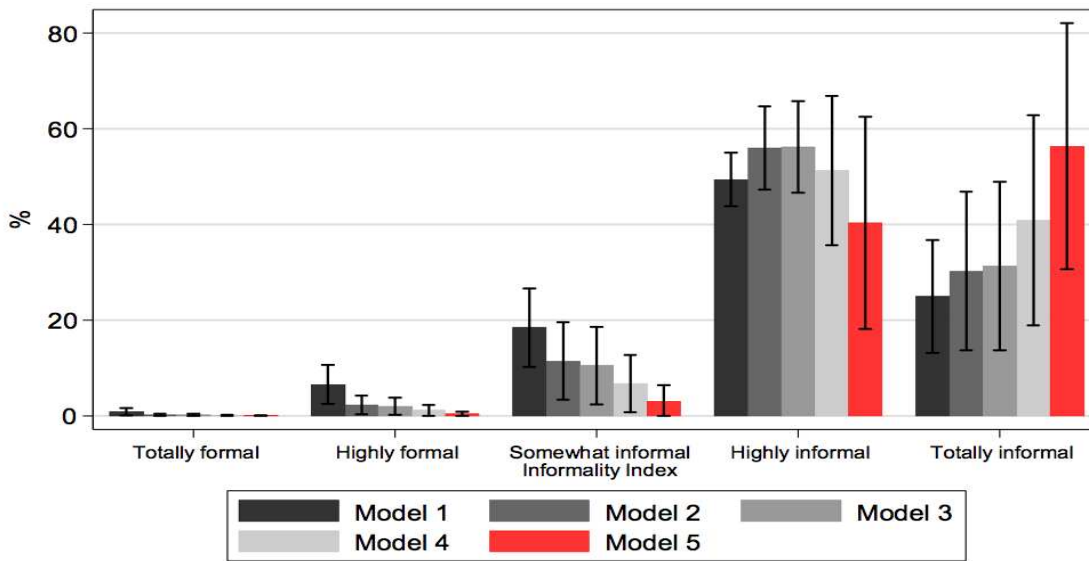
Source: : Lahore Enterprise Survey (2016). Own calculations.

Conclusions

This paper has revealed a continuum of entrepreneurship ranging from wholly formal to wholly informal with many varieties in-between. Reporting a survey of 500 micro-entrepreneurs in the city of Lahore in Pakistan, only 29.2% of enterprises surveyed are either wholly formal or wholly informal. The vast majority (80.8%) operate somewhere in-between at varying levels of informality.

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[2] This representative entrepreneur is a man, aged 25 to 34, with secondary education, monthly income from sales of more than 200,000, start-up motive "a family tradition", perceived advantage of registration "yes", product type "Clothing, Laces, Dying, Dry cleaning, or Stitching"; business age: 12 years; employees: 1 to 5; business bank account "no"; market informality "59 per cent", high competition level: "yes"; business competitiveness affected by other non-registered companies: "No"; tax morality: "somewhat acceptable"; culture 1: always; culture 2: always; culture 3: always; harassment by government departments: "No", tax level: "very unsatisfied"; risk detection: "somewhat risky"; punishment magnitude: "small fine"; redistributive justice: "very unsatisfied"; government support: "very unsatisfied"; governance quality: "very unsatisfied".

In terms of theoretical advances therefore, this paper makes three major contributions. Firstly, it reveals that conceptualizing informal and formal entrepreneurship as separate categories is no longer tenable; most entrepreneurs are neither wholly formal nor wholly informal, but operate at varying levels of formality. Secondly, it reveals a strong association between the level of informality and the characteristics of the entrepreneur and enterprise. Contrasting these findings with the literature on why entrepreneurs operate on an informal rather than formal basis, which emphasizes formal and informal institutional symmetry, and perceived formal institutional failings, this study identifies the individual-level characteristics of the entrepreneurs and their enterprises to be the major determinants of their level of informality. However, and thirdly, it reveals that the institutional environment does have an impact and needs to be addressed to facilitate the transition to formalization, especially the lack of horizontal trust in competitors and lack of vertical trust in terms of redistributive justice.

In terms of policy implications, meanwhile, the major contribution of this paper is that by revealing that the characteristics of entrepreneurs and enterprises are strongly associated with varying levels of informality, rather than the wider formal and informal institutional compliance climate, a very different policy approach to tackling informal enterprise and entrepreneurship will need to emerge. In recent years, institutional theory has called for a focus upon education and awareness raising to change attitudes towards informality and formal institutional changes such as procedural and distributive justice and fairness in order to build trust in the formal institutions, along with tax reductions, less burdensome regulations, reduced public sector corruption, and/or greater social protection (Williams, 2018). Here, however, higher levels of informality are not significantly associated with the institutional compliance environment, and more significantly associated with specific characteristics of entrepreneurs and enterprises. By identifying that higher levels of formality are associated with those with higher levels of education, and higher incomes, and enterprises with the number of employees and whether they possess a business bank account, the intimation is that tackling informality requires emphasis on initiatives so far seldom considered. For example, formalization requires: improvements in educational attainment in the wider society; support schemes to help entrepreneurs improve the income of their businesses; and initiatives to provide easier and cheaper access to business bank accounts. All are strongly correlated with higher levels of formality. Therefore, tackling informality is not simply about empowering enforcement authorities to impose fines and detect risky businesses (Williams, 2018). To facilitate the transition from informality to formality, more indirect and broader societal-wide changes are required.

There are, nevertheless, certain limitations to this study. It is a study of just one sector in one developing world city. As such, further studies are required in different contexts to see if similar findings are identified. If this paper therefore encourages further research from a degree of informality perspective in other contexts, then it will have fulfilled one of its intentions. If this then leads to greater reflection on the wider policy initiatives required to move entrepreneurs along the spectrum towards greater levels of formalisation, and evaluations of what combinations and sequences of policy measures can achieve this, along with what groups should be targeted, then it will have achieved its wider intention.

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APPENDIX

Table A.1. Principal Components Factor Analysis: rotated factor loadings and uniqueness measures

Index of degree of (in)Formality	Rotated factor loadings (factor 1)*	Uniqueness**
Un-incorporated enterprises	0.4723	0.7770
Not registered with tax authorities	0.6393	0.5913
Not registered with labour authorities	0.7383	0.4549
Not keeping formal accounts	0.7083	0.4983

Source: Lahore Enterprise Survey (2016). Authors' own calculations.
*Rotated factor loadings show the correlations between the variables and the factor (it ranges from 0 to 1). The higher the score the more correlated a variable is with the extracted factor.
**Uniqueness indicates the variance that is unique to the variable and not shared with the other variables (it ranges from 0 to 1). As a rule the greater the uniqueness score is the lower the relevance of the variable in the factor model.