

# **EQUALITY OR INEQUALITY? THAT'S THE QUESTION. THE PERFORMANCE IMPACT OF PAY GAPS IN COOPERATIVE BUSINESSES**

## **Abstract**

A key set of strategic decisions in new venture formation process revolves around whether adopting a relatively flat rewards structure with small differences in pay, or a more hierarchical structure with substantial pay gaps between top and bottom-earners. Combining behavioral theories of deprivation and tournament theory, we argue in line with tournament theory that cooperative new ventures may reap performance benefits from pay gaps, but consistent with behavioral theories of deprivation we contend that this positive relationship is moderated by business informality, the business's involvement in social movements and size of the business. Our results indicate support for our hypotheses on the positive effect of pay gaps on business performance, as well as the predicted moderating effects of informality and size. The results provide strong support for the notion that both tournament theory and theories of relative deprivation help explain the relationship between pay gaps and firm performance.

**Keywords:** Cooperative businesses, informality, new ventures, pay gaps, relative deprivation, tournament theory.

## INTRODUCTION

A key set of strategic decisions for any business is how to establish appropriate and motivational pay levels for members of the business (Wasserman, 2006). Among these decisions is whether the organization should adopt a relatively flat rewards structure wherein there are small differences in pay, or a more hierarchical structure wherein there are substantial pay gaps between top-earners and bottom-earners (Henderson and Fredrickson, 2001). Extant research to date does not provide clear answers as to which pay approach is best and different theoretical perspectives have developed, behavioral theories of deprivation and tournament theory, to justify the two views of how to approach pay. Thus, how pay gaps affect firm performance and the contingencies of this relationship are still an important area of inquiry. In this study brings these contrasting theoretical perspectives more into alignment through identifying salient contingency factors that impact which theoretical perspective is more appropriate in given situations.

Behavioral theories of relative deprivation (Cowherd and Levine, 1992; Martin, 1981) argue that “pay gaps are a critical part of a firm’s social-psychological and sociopolitical context and have a profound effect on whether people selfishly pursue their own interests or cooperatively contribute to broader organizational goals” (Henderson and Fredrickson, 2001: 97). Specifically, from this theoretical perspective small pay gaps foster cooperation in the firm (Lazear, 1989). Thus, the presence of large pay gaps affects perceptions of equality in the organization and the likelihood of cooperative behavior. Under this theory, large pay gaps are detrimental for the organizational performance. In contrast, tournament theory (Lazear and Rosen, 1981; Rosen, 1986; O’Reilly et al, 1988) argues that pay gaps combat shirking and free riding in organizations (Gibbons and Murphy, 1990) by creating incentives to perform (Becker and Huselid, 1992; Henderson and Frederickson, 2001). Thus, tournament theory argues that

organizational performance will benefit from pay gaps (Henderson and Fredrickson, 2001; Eriksson, 1999).

Probing prior evidence regarding pay gaps, we argue that examining the combined effects of both theories helps explain the relationship between pay gaps and organizational performance, and the conditions that moderate that relationship. Thus first we favor the arguments put forward by tournament theory scholars, and contend that organizations can reap the benefits from pay gaps even in those businesses focused on the communities where the principal of equality is an important driver. However, and in line with behavioral theories of relative deprivation and on distributive justice (Forsyth, 2005), we argue that the positive relationship between pay gaps and performance will be moderated by variables that increase the saliency of equality in the organization. For this paper we include 1) whether or not the business is formal (i.e., registered with the government), 2) the extent of business's involvement in social movements and 3) business newness. In all of those three cases, the forces pushing toward equality moderate the relationship between pay gaps and firm performance.

We test our hypotheses in a context which is particularly appropriate to examine the interactions of the theories, that of highly cooperative organizational forms; namely community based enterprises (CBE's). Peredo and Chrisman (2006) define community based enterprises as "*a community acting corporately as both entrepreneur and enterprise in pursuit of the common good*" (p.310). Community based enterprise occurs around the world and is an increasingly impactful, globally dispersed initiative in which organizations are founded on the principles of cooperation, participation, and reciprocity in order to better the lives of the organizational members and surrounding communities. Such firms are ideal for our research as they pursue profit they also argue that they bring a focus on members that is typically only implied for many

private firms; this focus on the wellbeing of members, therefore, making explicit that others only imply.

Prior research has indicated that context matters with respect to pay gaps. Ensley et al. (2007) discuss the negative effects of pay gaps on firm growth, and argue that “*Especially in family teams, where the group dynamics are more multiplex, pay dispersion produces very strong negative behavioral dynamics*”(p.1040 ). Pfeiffer and Langdon (1993) also found negative effects of pay gaps on satisfaction, productivity and collaboration in university faculties. Wang, Zhao and Thornhill (2015) focused on the how firm’s pay dispersion affects its innovation through employee participation and voluntary turnover. They found that there is a U-shaped effect of pay dispersion through employee participation and that the voluntary employee turnover negatively affect the influence of pay dispersion on organizational innovation. Papers advocating pay gaps from the tournament theory perspective, have examined them in the context of highly competitive environments (auto racing (Becker and Huselid, 1992,) or Fortune 500 firms (Henderson and Frederickson, 2001) where you would expect that the competitive aspects of tournament theory to be more salient and would be harder to examine the moderating effects of forces pushing toward equality. The context of CBE’s allows us to fully examine how forces toward equality could ameliorate the pay-gaps performance relationship.

The context of community based enterprises should provide a strong test for the theories. In community based enterprises all members are “owners”. All members have a vote and they participate in decision making. Peredo and Chrisman (2006) state that “*CEB is a process that carries with it significant tension and challenges in terms of maintaining a balance between individual and collectives needs*” (p.311). Due to their orientation toward the community, the ethos and emphasis in this organizations should run counter to the inequality provided by pay

gaps. Therefore, this environment should provide a particularly robust test of the possible support of tournament theory. In particular, should the arguments advanced by tournament theory prevail in this environment, and pay gaps are positively related to firm performance, we would expect the same to hold in more competitive environments, where a push towards equality would not be an important concern. Yet at the same time, this context is particularly suited to examine how forces pushing toward equality affect the pay-gaps performance relationship, and how those forces moderate the effects of pay gaps on performance.

For this study, we examine nearly 6,000 community based businesses. Overall, the results support the positive relationship between pay gaps and performance as well as the dampening effects of informality and newness. In both informal and new firms, equality is paramount and affects the pay-gap performance relationship. However, and contrary to our expectations, we found that the impact of high involvement in social movements strengthens the influence of pay gaps on the organizational performance

Our study has implications for both theory and practice. Extant behavioral theory regarding relative deprivation suggest that pay gaps are detrimental for team and firm performance (Cowherd and Levine, 1992; Martin, 1981). We demonstrate that this prediction does not hold for businesses, even for those ones focused on communities such as CBE's which should be more oriented toward equality. Specifically, we provide evidence for a positive effect of large pay gaps on the organizational performance even for those highly cooperative businesses that keep far from the traditional competitive environments. We find evidence of a substitution-effect whereby teams may retain cohesion and functionality in the face of pay gaps.

Moreover, this study provides evidence of the relationship between pay gaps and performance in entrepreneurial firms, and advances our understanding of those salient

contingencies that affects this relationship, including the formality of the firm, the extent of business's involvement in social movements and the firm's age. In this way, we extend previous entrepreneurship literature on pay gaps that has concentrated mostly on examining pay gaps for women in new ventures (Greene et al, 2001; Francine and Lawrence, 2007; Morley, 1978; Pucheta-Martínez and Bel-Oms, 2015; Wayne, Hussey and Jetter, 2011). We explore factors not yet addressed by the entrepreneurship literature such as the role of pay gaps in community based enterprises, the role of formality, the involvement in social movements and the role of firm age in the pay-gaps performance relationship.

Finally, against our underlying premises, our results indicate that being involved in social movements does not link to be more oriented toward equality. Indeed, involvement in social movements strengthens the positive influence of pay gaps on organizational performance. Regarding practice, we provide guidance to managers on structuring their reward systems to maximize performance, and conditions under which these reward systems are applicable. Furthermore, we set the stage for a wealth of potential future research on the antecedents of performance.

## **THEORY AND HYPOTHESES**

As noted two theories— relative deprivation and tournament theory - are at odds regarding both predictions and findings on the impact of pay gaps. Relative deprivation research is built on the premise that when people have numerous opportunities to make reward comparisons, as is the case in contemporary organizations, they will compare their rewards to those of individuals of higher rank (Cowherd and Levine, 1992; Dornstein, 1988). Deprivation occurs when these comparisons are made and individuals determine that they receive less than they deserve, which

is stronger in cases of large pay gaps (Henderson and Frederickson, 2001; Martin, 1981; 1982). In turn, feelings of deprivation may increase organizational behaviors like absenteeism, strikes, and sabotage (Crosby, 1984; Lazear, 1989; Martin, 1981; 1982), and decrease organizational cohesiveness, product quality, and performance (Cowherd and Levine, 1992; Henderson and Frederickson, 2001; Staw, 1984). Therefore, relative deprivation views a negative relationship between pay gaps and organizational performance.

Tournament theory, proposed by Lazear and Rosen (1981), offers a competing perspective on pay gaps within businesses. Tournament theory asserts that businesses base compensation on organizational rank and that doing so serves as an incentive system that encourages effective competition among employees. Employees in turn will expend greater effort to achieve promotion and higher pay. The larger the pay gap, the more effort will be provided by employees and the better the organizational performance (Lin, Yeh, and Shih, 2013).

Beyond the motivation for higher pay, prior tournament theory work has argued that pay gaps may help improve conditions of shirking, free-riding, and costly supervision (Becker and Huselid, 1992; Gibbons and Murphy, 1990; Henderson and Frederickson, 2001). The outcome of tournaments, therefore, argues that pay gaps can enhance firm performance (Eriksson, 1999; Henderson and Frederickson, 2001; Lee, Lev, and Yeo, 2008)

Therefore, the two theories offer differing perspective with relative deprivation work arguing pay gaps are detrimental to organizational performance, while tournament theory argues that pay gaps are beneficial for organizational performance. Empirical results on the subject have not provided clear understanding which theoretical view is correct. Studies in a plethora of industries and countries find a range of results with some finding a positive relationship between pay gaps and performance (e.g., Becker and Huselid, 1992; Ehrenberg and Bognanno, 1990;

Main, O'Reilly III and Wade, 1993), while others find no significant relationship (e.g., Sadler, 2001), and yet others find a detrimental effect on performance (e.g., Wade, O'Reilly, and Pollock, 2006). Other studies from different perspectives such as the social comparison have focused on the effects of pay gaps in the organizational innovation through employee's behavior (Wang et al., 2015)

At the end the theories differ as to what would be the main drivers of behavior regarding pay gaps toward organizational performance. Would equality be the key driver, as argued by relative deprivation, or would it be relating pay to actual performance as proposed by tournament theory? Community enterprises combine the entrepreneurial aspect of new ventures with a community component. We contend that in that environment, the entrepreneurial driver toward higher performance should trump the community aspect, and we expect that pay gaps should be related to financial performance. We argue that in new venture organizational forms which inherently engender cooperation, the entrepreneurial needs will dominate and the organizations may reap the benefits of pay gaps toward organizational performance without compromising cohesion and functionality in new ventures. Stated formally:

*Hypothesis 1: Pay gaps are positively related to financial performance.*

We expect a holistic and rather stable positive effect of pay gaps on financial performance, yet it is likely that the strength of the relationship is contingent upon various organizational factors. In making this argument, we draw on relative deprivation (Henderson and Frederickson, 2001; Martin, 1981; 1982) and on a literature that is heavily related to tournament theory (Cowherd and Levine, 1992) – distributive justice theory. As stated earlier, relative deprivation theory argues that individuals will compare their salaries with those of higher ups and in the case of high pay gaps, when they get less than they deserve they will engage in behaviors



that negatively affect firm performance. So in the presence of large pay gaps, relative deprivation theory argues that firm performance will be negatively affected. While relative deprivation helps explain why the phenomena occurs, distributive justice theory tells us about how the process occurs.

Distributive justice, simply put, is the fairness of organizational outcome distributions (Gilland, 1993). Evaluations of unfair distributions produce negative emotions which motivate individuals to change their behavior which, in turn, negatively effects the functioning of organizations and the personal satisfaction of the individuals they employ (Adams, 1965). Both theories contend that pay gaps will have a negative effect on organizational performance.

The predominance of early work on distributive justice focused on the notion that members of an organization compare the ratio of their inputs and outcomes to that of other members (Adams 1963; 1965; Greenberg and Colquitt, 2013). That is, members perceive fair outcomes to be based on contributions; e.g., if I work longer or produce more than other members, I should get paid more than them. Subsequent research on the topic, however, went beyond this equity-based evaluation of fairness to identify two further common evaluations by organizational members (Deutsch, 1975; Leventhal, 1980): equality-based, in which members believe equal distributions or rewards and resources is fair, and need-based, in which members believe that it is fair to distribute rewards and resources to those with the greatest needs. Moreover, this research has identified conditions under which each type of fairness will be judged. For instance Deutsch, (1975) proposed that “*in cooperative relations in which economic productivity is a primary goal, equity rather than equality will be the dominant principle of distributive justice*” (p. 143), and “*in cooperative relations in which fostering of personal*

*development and personal welfare is the primary goal, need will be the dominant principle of distributive justice” (p. 143).*

We extend this individuals’ based line of inquiry focused on how organizational performance is affected by pay gaps. Namely, we argue that whether or not the organization is informal, is involved in social movements, and is a new venture will moderate the positive relationship between pay gaps and performance. Our arguments are based on the distributive justice literature premises that individuals will vary in what they believe is fair, that these beliefs are shaped by the nature of the organization, and that violating fairness expectation will negatively impact performance (Greenberg and Colquitt, 2013), and on relative deprivation arguments that pay gaps affect cooperative behavior and ultimately firm performance (Cowherd and Levine, 1992). The emphasis on equality should be higher the least the organization is structured in terms of a productive organization with performance concerns. That should be the case the newer and the least formal the organization is. Moreover, it is expected that those businesses with high involvement in social movements will be more oriented toward equality. We expect that newness, informality and high involvement in social movements to moderate the relationship between pay gaps and firm performance.

### *Business Informality*

Informal businesses are those that are not legally registered and are largely unregulated (Nyström, 2008; Webb et al., 2009). Businesses in the informal economy fall within informal institutional boundaries (i.e. norms, values, and beliefs in societies), and outside formal institutional boundaries (i.e. laws and regulations) (Webb et al., 2013). Thus, while they operate illegally, informal businesses are often seen as legitimate by substantial groups in many societies. According to Schneider (2002), informal businesses are estimated to account for approximately

10-20% of GDP in developed economies, and up to 60% in emerging economies (with Brazil, the context of the present study, estimated at near 40%).

Extant research has identified two common characteristics of informal businesses which may influence the strength of the pay gaps-performance relationship. First, informal businesses tend to be smaller and have lower levels of productivity than their formal counterparts (Webb et al., 2013; De Castro, Khavul and Bruton 2014). The larger the business grows, the more visible it become, and the more difficult it is to hide from authorities. We propose that large pay gaps between the highest and lowest paid members of an organization are seen as fairer in larger organizations, as the leaders must exert more effort in larger organizations. Conversely, within smaller organizations there is less distance between the top and bottom employees and perhaps less of a distinction between the roles of those at the top and bottom. As such, employees will perceive larger pay gaps in smaller informal organizations as less fair as a very high level of pay gaps suggests marked differentiation among employee's pay (Wang et al., 2015)

Second, informal organizations are characterized by substantial resource constraints, and less organized organizational structures, due to their lack of support from formal institutions and to their nature (Webb et al., 2013). As examples, informal businesses are generally restricted from obtaining formal financing and accessing broad markets (Web et al., 2009), and have problems with hiring, over relying on family groups for their employees (De Castro, Khavul and Bruton 2014). Given the internal unstructured, and resource-scarce environment in informal businesses, organizational members will view high wages for those at the top as extravagant and unfair.

Taken together, we argue that the informality of the business will decrease the positive effect of pay gaps on organizational performance. Stated formally:

*Hypothesis 2:* Organizational informality moderates the relationship between pay gaps and financial performance such that the relationship is less positive in informal organizations.

### *Social Movements*

Social movements within our context are large-scale group efforts to change or better political or social conditions (Tarrow and Tollefson, 1994). Examples of popular and contemporary social movements include the LGBT, the Arab Spring, the Environmental Sustainability, and the Fair Trade movements. While frequently thought of as comprised of masses of individuals, businesses are often involved in social movements. As an example, coffee shops may commit to serving 100% Fair Trade coffee.

Businesses involved in social movements have essentially committed to care about more than the “bottom-line” – they are committing to bettering their communities and beyond. This commitment is a signal to stakeholders, including the organization’s members, that the pursuit of monetary rewards is not the sole, or often even the primary, focus of the business. As such, maximizing the pay of the organization’s upper echelons would run contrary to this signal and may be seen as unfair by organizational members. Previous research has associated the involvement in social movements to equality values (Bebbington, et al., 2010; Goldin, 2006; Deere, 2003) so that it is expected that the extent of involvement in social movements is going to ameliorate the relationship between pay gaps and organizational performance. Thus, the involvement in social movements is going to favor situations that push toward equality which shows the effect of relative deprivation against the tournament theory.

Nonprofit organizations serve as an extreme example of a type of organization devoted to social betterment and not profitability. Within nonprofits, high pay for the top earners is frowned

upon, and often attracts negative media attention or backlash from other stakeholders (Balsam and Harris, 2013). While high pay for executives of for-profit organizations is sometimes met with backlash as well, the issue is magnified when the organizations are devoted to social missions. Taken together, we hypothesize that high involvement in social movements negatively moderates the relationship between pay gaps and performance. Stated formally:

*Hypothesis 3: High involvement in social movements moderates the relationship between pay gaps and performance in cooperative organizations such that the relationship is less positive the greater the involvement.*

#### *Venture Newness*

The liability of newness literature offers a rich and well-established framework for distinguishing between the conditions of new and established ventures (Stinchcombe, 1965). In his seminal work on the liabilities of newness, Stinchcombe (1965) identified several new venture characteristics, which are holistically detrimental to their performance. These characteristics include that new ventures: rely on social interactions among relative strangers, must create and learn new roles, and lack established routines among members – each of which, we argue, may negatively impact the relationship between pay gaps and performance.

First, as new venture members are relative strangers, trust is in short supply (Stinchcombe, 1965). Over time, established venture members may come to know and trust each other to foster the cooperation necessary to dampen the negative effects of pay gaps. New ventures, on the other hand, lack this luxury. Second, as roles are not yet created, or are in the process of being learned, it will be unclear to individuals why some members are getting paid more than others, and more likely to be deemed unfair. Third, a lack of routines within a new venture may facilitate behaviors like rule-breaking, defiance, and sabotage (Nelson and Winter,

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REFERENCIAS), each of which may undermine the cooperative spirit in organizations and give way to the harmony-breaking outcomes of pay gaps. In addition, in newer organizations the effects of relative deprivation should be stronger, organizational members would expect smaller pay gaps and affect the relationship between pay gaps and organizational performance should be reduced.

Lastly, as is the case with informal ventures, new ventures are generally resource constrained (Jarillo, 1989; Stinchcombe, 1965; Vesper, 1990). Thus, as with informal ventures, high pay for those at the top of the organization may be seen as unfair, given the scarcity of resources to distribute. Thus, the newness of the business will decrease the positive effect of pay gaps on organizational performance. Taken together, we hypothesize that the positive relationship between pay gaps and performance will be weaker in new ventures as compared to their established counterparts. Stated formally:

*Hypothesis 4:* Newness moderates the relationship between pay gaps and performance in cooperative organizations such that the relationship is less positive in new ventures.

## **METHODS**

### *Sample*

As we have stated earlier, community enterprises provide a useful context to study the relationship between pay gaps and organizational performance. Those environments provide a context where forces toward equality are tested against forces geared toward performance results.

Moreover, scholars in political economy have argued that that worker co-operatives will have to adopt the same organizational forms and priorities as capitalist business in order to survive (Cornforth, 1995). Thus, we contend that the interplay of performance and equality concerns will affect the relationship between pay gaps and firm performance and that both tournament and relative deprivation theories help explain the effect of pay gaps on firm performance. To study these businesses, we chose to focus on community based enterprises.” Peredo and Chrisman (2006) describe community based enterprises as “*the result of a process in which the community acts entrepreneurially to create and operate a new enterprise embedded in its existing social structure. Furthermore, CBEs are managed and governed to pursue the economic and social goals of a community in a manner that is meant to yield sustainable individual and group benefits over the short and long term*”(p. 310). Brazil represents an appropriate context to analyze this kind of alternative economy for two primary reasons. First, cooperative organizations have been a central and enduring facet of the overall Brazilian economy for years. To wit, this economic model helped to decrease poverty rate by as much as 57% between 2001 and 2011 according to the Brazilian Institute of Applied Economy Research. Second, given its prevalence and impact in Brazil, the study and support of community based enterprises has been incorporated into governmental policy with the establishment in Brazil of the National Secretariat of Solidarity Economy in 2003. This level of government involvement has produced arguably unparalleled data for the study of cooperative organizations.

In 2009 and 2010, the Brazilian government conducted a large-scale data collection project to learn about the current status of cooperative organizations focused on community in their country. Representatives of the government identified and surveyed roughly 20,000 business focused on community through this process, covering all Brazilian states, and gathering data on a

variety of topics including financial performance, income distribution practices, organizational form, and more. The result of this effort was the creation of the Empreendimento Econômico Solidário (Solidary Economic Enterprise) database.

From this population, we focused our sample to businesses whose “main economic activity” is production and commercialization. Alternatives to this economic activity generally either focus on providing benefits to other businesses (e.g. products or services exchanging; commercialization; group savings) or consumption by members. The final sample of businesses that provided answers to our questions of interest includes 5,945 organizations.

#### *Dependent Variable*

Our dependent variable is organizational *performance* as reflected by profits. Organizations reported average monthly profits Brazilian Reals. At the time of this writing, 1 US Dollar equals 3.77 Reals. The dependent variable is profits in thousands of Reals.

#### *Independent Variable*

Our independent variable is organizational *pay gap*. Each organization in our sample reported both the highest wage earned by a member of the organization and the lowest, in Reals. The pay gap is the former minus the latter. Values were log transformed given their resulting distribution.

#### *Moderators*

Our study includes three moderators. The first is organizational *informality*, which indicates whether or not an organization is registered with the government. All solidarity business in our sample fit into one of four organizational forms: 1) Informal Group, 2) Association, 3)



Cooperative, and 4) Trade Business. Informal groups refer to those businesses not legally registered. Associative, cooperatives and trade companies are businesses registered.

Associations are defined as nonprofit groups whose members have equal rights and make decisions in assembly. Cooperatives are societies of people that, through contracts, must contribute either with goods or services to develop an economic activity with a common benefit. This economic activity may be related to services, operations, or any other specific firm activity. Finally, trade companies refer to all the other formalized organizations with economic purpose. Informality is a dummy variable coded ‘1’ for informal groups, and ‘0’ for others (as explained in the next section, we control for the other forms in our models).

The second moderator is the extent of involvement in *social movements*. Social movements within our context are large-scale group efforts to change or better political or social conditions (Tarrow and Tollefson, 1994). Within the survey, the Brazilian government asked which social movements, if any, is the businesses a part of, with 17 listed social movement options, and the opportunity to write in others. These social movements include “Ethnic/racial movement”, “Environment movement”, “Females/gender movement”, “Religious movement”, and “GLBT movement.” The social movements’ variable is operationalized as a count variable of the number of movements to which the firm claims to belong.

The third moderator is whether or not the business is a *new venture*. Both the year the firm was founded and the year of the interview were documented by the Brazilian government. We follow extant operationalizations by classifying new ventures as those less than 7 years old (Boeker and Karichalil, 2002; Lumpkin and Dess, 2001). The new venture variable is coded ‘1’ if the business is new, and ‘0’ if the business is established (7 years and above).

### *Control Variables*

We include a number of control variables to account for alternate explanations of variance in the dependent variable. First, as meaningful variance in age remains in both the new and established ventures, we control for the *age of the business* in years. Second, prior work has shown significant performance differences between rural and urban businesses in developing contexts, due to factors such as ease of access to markets and suppliers (Westhead and Wright, 1998). We control for the area in which the business is located, with three options – rural, urban, or both (businesses that span both types of areas; e.g. an agriculture business with both a rural farm and urban storefront). Each is assigned a dummy variable, with rural as the omitted category. Third, we attempt to control for some degree of technological advancement of the business through whether or not the business has a computer. This *technology* proxy variable is dichotomous and coded ‘1’ if the business has a computer, and ‘0’ otherwise. Fourth, we control for the *size* of the business through a count variable of the number of members. Fifth, prior research has demonstrated that female-lead businesses often perform differently as compared to their male-lead counterparts (Brush, 1992; Rosa, Carter and Hamilton, 1996). The businesses in our sample report both the number of females and male members. *Percent female* is calculated as the former divided by the latter. Sixth, extant research has provided evidence that race of organizational members may be related to organizational performance. Businesses in our sample were asked which, if any, is the predominant race represented in the organization. The seven options provided were: “white”, “black”, “yellow”, “Mestizo”, and “Indian”, along with options for unknown or there is no predominant race. Dummy variables were assigned to each option, with white as the omitted category. Seventh, we include a proxy for the complexity of the organization by including a count of the *number of products* offered by the business. The number

of products offered may positively impact profitability if resources can be shared across the product lines, or it may be detrimental if it spreads organizational resources among unrelated products (Chatterjee and Wernerfelt, 1991; Nayyara, 1993). Eighth, we control for the aforementioned organizational forms (e.g. Associations, Cooperatives) as the structures, processes, and regulations of differing organizational forms may impact profitability. Ninth, we control for whether or not the organizations identify themselves as part of a social movement, as this may indicate whether the organization is more willing to forego financial performance for social performance. Social movements within our context are large-scale group efforts to change or better political or social conditions (Tarrow and Tollefson, 1994). Within the survey, the Brazilian government asked which social movements, if any, is the businesses a part of, with 17 listed social movement options, and the opportunity to write in others. These social movements include “Ethnic/racial movement”, “Environment movement”, “Females/gender movement”, “Religious movement”, and “GLBT movement.” The social movements’ variable is operationalized as a count variable of the number of movements to which the firm claims to belong.

### *Method of Analysis*

Through preliminary inspection of the data, we found that the profit variable contains several substantial outliers. As ordinary least squares (OLS) regression is highly sensitive to outliers, which may bias the results (Chatterjee and Hadi, 1986), we elected to run robust regression models. Robust regression is a compromise between OLS which counts all data points equally and excluding outliers from the analysis. The analysis, weights data points using Huber and biweighting techniques (Rocke, 1983), dampening, yet still employing the effects of influential observations.

Perhaps the primary concern in our models is the possibility of reverse-causality. That is, it is possible that profitability is what drives pay differentials in firms, likely such that the higher performing firms pay their upper echelons more, creating a large pay differential. As our data is cross-sectional, we are unable to lag predictors or observe changes which would allow us to partially mitigate the potential reverse-causality issue. However we are able to follow precedence by running a two-stage instrumental variable equation and analyzing the presence of endogeneity (of which reverse-causality is a leading cause) using the Durbin-Wu-Hausman test (Davidson and MacKinnon, 1989). To do so, we need to identify an instrument, or a variable that is significantly related to the suspected endogenous variable, but weakly related to the dependent variable (Murray, 2006). This is particularly difficult within our models given that both profit and pay gaps are financial variables, and factors that are tied to one are often tied to the other. However, we believe that one specific variable should theoretically be linked to the IV, and not the DV; namely, the number of times that there is a general meeting of all of the members of the business each year. Our argument is that the more often there is a general meeting of members, the more members may advocate for self-serving interests like raising the minimum wages and the more members may monitor and control the wages of the highest earners. Thus, we run the Durbin-Wu-Hausman test following the instrumental variable model to determine the presence of endogeneity. The results ( $F = 1.80$ ;  $p > 0.10$ ) indicate that endogeneity is not a problem in our models.

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## *Results*

Table 1 presents the descriptive statistics and correlations among our variables. Table 2 presents the results of our analyses. Model 1 is our baseline model, including only control variables as predictors. Model 2 tests the main effect prediction of pay gaps on performance, and includes control variables and the independent variable. Models 3 and 4 test our moderation hypotheses and include those variables in the previous model, as well as the variables informal, social movements, and new ventures, tested individually. Model 5 is the full model with all controls, the IV, and all moderators tested together.

Hypothesis 1 predicts that pay gaps are positively related to financial performance in cooperative organizations. As shown in Model 2, the coefficient for pay disparity is positive and significant ( $\beta = 1.11$ ;  $p < 0.01$ ). Thus, we find support for Hypothesis 1, lending credence to the substitution effect whereby organizations may maintain functionality and cohesion in the face of pay disparity if they are inherently cooperative. As an alternative perspective, the results support the notion that pay disparity does not degrade the cohesion on cooperative organizations.

Hypothesis 2 predicts that organizational informality moderates the relationship between pay gaps and financial performance in cooperative organizations such that the relationship is less positive in informal organizations. As shown in Model 3, the coefficient for the interaction term between pay disparity and informality is negative and significant ( $\beta = -1.03$ ;  $p < 0.01$ ). Thus we find support for Hypothesis 2. To aid interpretation, we plot the interaction effect in Figure 1 at one standard deviation (SD) above and below the pay gap mean. As may be seen in the figure, pay gaps are beneficial for both formal and informal firms. However the positive relationship between pay gaps and performance is stronger in formal firms.

Hypothesis 3 predicts that involvement in social movements moderates the relationship between pay gaps and performance in cooperative organizations such that the relationship is less positive the greater the involvement. As presented in Model 4, the coefficient for the interaction term between pay disparity and social movements is positive and significant ( $\beta = 0.09$ ;  $p < 0.01$ ), providing evidence for the opposite of the predicted relationship. To aid interpretation of the relationship, we plotted the interaction effect in Figure 2. We plotted the high and low levels of pay gap at one SD above and below the mean however, as one SD below the mean was not possible for the social movements variable (it would result in a value below zero), we plot the low value for social movements as zero and high as one SD above. As may be seen in the figure, pay gaps are beneficial for businesses with both high and low involvement in social movements, yet the relationship is stronger for firms with high involvement in social movements. Holistically, these results suggest that members may see pay disparities as more fair, the more social movements a business is a part of.

Hypothesis 4 predicts that newness moderates the relationship between pay gaps and performance in cooperative organizations such that the relationship is less positive in new ventures. As shown in Model 4, the coefficient for the interaction term between pay disparity and new ventures is negative and significant ( $\beta = -0.43$ ;  $p < 0.01$ ). Thus we find support for Hypothesis 3. To aid interpretation, we plot the interaction effect in Figure 3. As may be seen in the figure, pay gaps are beneficial for both established and new ventures, yet more so for the established.

On the whole, the results suggest that pay gaps are beneficial under every context we've examined. That is, we did not identify a contextual factor under which pay gaps are detrimental

(negative relationship) in cooperatively oriented organizations. However, the effects are more substantial for formal businesses, those involved in social movements, and established ventures.

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INSERT FIGURES 1, 2 AND 3 ABOUT HERE  
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### *Robustness Checks*

We explore the robustness of our findings with several additional tests. First, we test models with an alternative, top-line dependent variables – revenues. Revenue dependent variables are common in research within similar settings (e.g. Brush and Vanderwerf, 1992; Gras and Nason, 2015) as advanced and detailed accounting figures are rarely kept or reported in developing contexts (Frese et al., 2007; McPherson, 1998). Moreover, top-line measures represent the value captured by firms and the willingness of consumers to pay for a business's goods and services (Priem, 2007; Priem, Butler and Li, 2013). Overall sales are not reported by the businesses in our sample, so we calculated them by adding the cost of monthly inputs, monthly wages, and profits. All coefficients remain in the same direction and maintain similar significance levels with the alternative dependent variable.

Second, we included age of the business in addition to whether or not the business was a new venture, in order to control for within-new venture and within-established venture variance. However, it's possible that the age of business variable confounds the new venture moderator results. As such, we tested the models without the age of business control variables. The new venture interaction effect, and all other predicted relationships remained significant at the same levels, and in the same direction.

Third, seven years is a common cut-off to distinguish between new ventures and their establish-ventures cut-off (e.g. Boeker and Karichalil, 2002; Lumpkin and Dess, 2001). However arguments may be made regarding arbitrary nature of this cut-point. As such, we conducted a sensitivity analysis using alternative time frames to identify new ventures – namely three and five years. The interaction effect for new ventures remained significant below at the .05 level and in the same direction for both three and five year limits.

Fourth, we employed robust regressions to dampen the effect of outliers in our dependent variable, yet outliers are often valuable in understanding the nature of relationships (Gladwell, 2008; Wilcox, 1998). As such, we reran our models using traditional ordinary least squares regression. The main effect, the informality moderator, and the new venture moderator remained in the same direction and with the same significance levels, however the social movements' interaction effect shifted substantially out of significance.

## **DISCUSSION**

Our study seeks to broaden the understanding of how pay gaps influence organizational performance and which factors affect this relationship. Drawing on the existing research concerned with understanding how pay gaps affect organizational performance, we addressed this issue by providing robust regression models including new ventures, the roles of pay gaps on organizational performance, and how informality, newness and involvement in social movements affected this relationship. Previous studies on pay gaps do not provide clear answers as to which pay approach is best for the organizational performance if adopting a relatively flat rewards structure wherein there are small differences in pay, or a more hierarchical structure wherein there are substantial pay gaps between top-earners and bottom-earners (Henderson and



Fredrickson, 2001). So far the two main theoretical perspectives, behavioral theories of relative deprivation and tournament theory, have offered different perspectives being far from clear which one is the best.

Overall, the potential role and the interplay of these contrasting perspectives to explain the effect of pay gaps on organizational performance and identifying salient contingency factors that impact this relationship has been an under researched phenomenon. Therefore, we believe that significant gaps in the literature warranted this research. Our argument is based on the idea that examining the combined effect of both theories helps to explain the relationship between pay gaps and organizational performance, and the conditions that moderate that relationship. Taken together, our results demonstrate a positive relationship between pay gaps and firm performance and that the relationship is moderated by the business's formality, the extent of business's involvement in social movements and new venture status.

Regarding the involvement in social movements we expected that this would negatively affect the relationship between pay gaps and firm performance, but our results indicate the opposite, that is, that involvement in social movements strengthened the relationship between pay gaps on performance. We believe that there are a couple of possible reasons for this result. First, involvement in social movements for CBE's could be a way to further differentiate and compete in their areas. If that is the case, the performance concerns would take precedence over equity concerns. Having a successful venture would be more important than having equality within the organization for those CBE's involved in social movements. Secondly, we measured social involvement as a count variable of the number of social movements the firm is involved with. In doing so, we might have focused on the number of social movements as opposed to the degree of involvement in a particular one. Further research is needed to clarify this issue.

Our findings have implications for both theory and practice. Regarding theory, the academic conversations around pay-gaps have progressed along parallel, but conflicting paths. One stream argues for and finds a positive effect of pay gaps on performance while the other stream argues for and finds a negative effect. We advance these conversations by shifting the focus from *if* the effect is positive or negative to *when* is it positive or negative. In doing so we help reconcile prior research regarding tournament and relative deprivation theories. Our results indicate that both play significant roles in the pay gap - performance relationship. Thus, we believe the two streams of research may be aligned through exploration and explication of contingency factors in the relationship. We contribute to this alignment first by arguing for a substitution-effect whereby teams may retain cohesion and functionality in the face of pay gaps if alternate factors, such a cooperation-oriented mission, motivate participants. We further identify salient moderators within the cooperative context and extend the entrepreneurship pay gap literature beyond its focus on gender to include the notions of informality, involvement in social movements and newness, which are key to understanding entrepreneurial behavior in a global environment.

Beyond the pay gap literature and theories, we make contributions to emerging scholarship on cooperative and socially-oriented ventures (e.g. Nicholls, 2006, Svendsen and Svendsen, 2004). This literature has begun to uncover the antecedents of performance in social organizations, including factors surrounding the organization's mission (Austin, Stevenson and Wei-Skillern, 2006), access to capital (Weisbrod, 2000), and entrepreneurial orientation (Lumpkin et al., 2013). To this emerging literature we add a factor that is within the control of business owners or manager and manipulated with relative ease.

Regarding practical implications, following Wang et al. (2015) who claim that “*Economic inequality, although often discussed at the societal level, is also an important organizational topic*” (p. 1156) we provide guidance for managers of both cooperative and traditional businesses. For managers of cooperative businesses as those ones focused on the community, we demonstrate that creating pay gaps can drive financial performance. Notably, some leaders of cooperative businesses may be less interested in maximizing financial performance and more interested in equality among members. Furthermore, some cooperative businesses may not have managers at all, with organizational decisions dictated by voting of all members. In these situations, pay gaps may not improve organizational performance, as performance would be measured by outputs beyond revenues and profits.

However, for organizations searching to maximize financial outcomes, pay gaps provide a means to their desired end. Furthermore, managers benefit from aligning organizational decisions with contingencies and contexts (McWilliams and Smart, 1993). We provide three salient contextual factors that influence the strength of the relationship between pay gaps and performance. For managers of traditional businesses, we provide some evidence that pay inequality need not lead to negative outcomes if some organizational factor fosters cooperation. We are not suggesting that traditional businesses need reform into a cooperative. Instead, cooperation may be fostered in other ways, perhaps through team trainings, transformational leadership techniques, or public acknowledgment and praise of employee cooperation behaviors. Whether or not such means of fostering cooperation supersedes competitive behaviors created by pay gaps is a matter for future research. However, managers of traditional firms with large pay gaps may do well to test the waters of fostering cooperation, and managers of traditional firms

that have already achieved a cooperative culture may benefit from testing the waters of establishing larger pay gaps.

### *Limitations and Future Research*

Our study contains several limitations, several of which offer opportunities for future research. First, our study is conducted within the context of a single country – Brazil. Yet cooperative organizations may manifest themselves quite differently within other cultures and countries, and this may influence the effect of pay gaps on performance. In particular, we expect that the degree to which cultures are collective versus individual, and the degree to which individuals accept power-distance in a culture (Hofstede and Hofstede, 2001) will substantially impact the relationship between pay gaps and performance, particularly in cooperative organizations.

Second, our performance variable is fairly rudimentary compared to traditional strategy work. Much of this is necessity as sophisticated measure of performance such as total shareholder return, or market-to-book value are inapplicable or unavailable in this context. Nevertheless, future work may explore the relationship between pay gaps and alternative measure of performance. We believe that particularly fruitful measures may be firm growth, survival, and competitive advantage.

Third, our data is cross-sectional. As such, we are limited from studying changes in pay gaps and performance over time. Moreover we are limited from studying the amount of time it takes for pay gaps to influence performance. While difficult to attain, gathering longitudinal data on cooperative organizations would allow for exploring interesting research questions that were off limits to us.

Fourth, as it was mentioned, our social movements' variable was calculated as the number of social movements businesses listed to which they are members. However, we do not have the ability to measure the extent of involvement in each social movement. Therefore, one business may be extremely involved or a leader in a particular social movement, while another may be minimally involved with four social movements; in which case the latter business would be rated higher on social movements involvement within our analysis. We believe that the extent of involvement in social movements represents an appealing area of research for scholars in a host of domains, including stakeholder theory (Donaldson and Preston, 1995; Freeman, 2010), institutional theory (Campbell, 2007; Scott, 1995), and the broader entrepreneurship literature.

Fifth, all organizations in our sample are determined by the Brazilian government to be members of the solidarity economy. As such, we assume and argue that the organizations are cooperatively-oriented. However it is possible that solidarity businesses vary significantly on the degree to which they are cooperatively-oriented, and we are unable to measure this organizational dimension. Future work may benefit by developing measures of cooperative-orientation and more directly investigating its effect on the relationship between pay gaps and performance.

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## TABLES AND FIGURES

**Table I. Descriptive Statistics and Correlations among Variables**

	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1) Profit (thou)	35.51	485.87	1.00																		
2) Pay Disp (ln)	5.63	1.28	0.06	1.00																	
3) Age of Bus.	11.66	7.38	0.02	0.07	1.00																
4) Area - Rural	0.5	0.5	-0.01	0.10	0.14	1.00															
5) Urban	0.39	0.49	-0.01	-0.16	-0.13	-0.80	1.00														
6) Rural & Urban	0.11	0.32	0.03	0.09	-0.02	-0.35	-0.29	1.00													
7) Technology	0.51	0.5	0.02	0.08	-0.05	-0.33	0.25	0.15	1.00												
8) Size	56.02	269.42	0.07	0.06	0.17	0.03	-0.08	0.07	0.06	1.00											
9) Perc. Female	0.58	0.31	-0.08	-0.30	-0.19	-0.41	0.44	-0.03	0.12	-0.07	1.00										
10) Age - Youths	0.04	0.2	-0.01	-0.05	-0.04	-0.02	0.03	0.00	0.06	0.01	0.00	1.00									
11) Age - Adults	0.89	0.31	0.01	0.08	-0.01	0.05	-0.05	-0.01	-0.03	-0.04	-0.04	-0.59	1.00								
12) Age - Elderly	0.03	0.18	-0.01	-0.05	0.05	-0.05	0.05	0.00	-0.02	-0.02	0.06	-0.04	-0.53	1.00							
13) Age - No Pred.	0.03	0.18	0.00	-0.02	0.01	-0.01	0.00	0.02	0.01	0.08	0.02	-0.04	-0.54	-0.03	1.00						
14) # of Prods (ln)	1.57	1.04	-0.02	-0.03	-0.02	-0.28	0.23	0.08	0.21	0.00	0.28	0.00	-0.01	0.00	0.01	1.00					
15) Informal Bus.	0.38	0.49	-0.05	-0.22	-0.25	-0.36	0.38	-0.01	0.08	-0.12	0.39	0.04	-0.03	0.04	-0.03	0.15	1.00				
16) Association	0.53	0.5	-0.01	0.14	0.23	0.39	-0.39	-0.01	-0.17	0.06	-0.33	-0.03	0.02	-0.01	0.01	-0.16	-0.84	1.00			
17) Cooperative	0.08	0.27	0.11	0.14	0.02	-0.07	0.04	0.04	0.15	0.09	-0.09	-0.02	0.02	-0.04	0.02	0.01	-0.23	-0.31	1.00		
18) Trade Company	0.01	0.08	0.00	0.02	0.02	0.00	0.00	0.00	0.05	0.03	0.01	0.00	-0.02	-0.02	0.04	0.01	-0.07	-0.09	-0.02	1.00	
19) New Venture	0.39	0.49	-0.01	-0.07	-0.64	-0.18	0.15	0.05	0.09	-0.06	0.19	0.05	-0.01	-0.03	-0.01	0.03	0.27	-0.26	0.00	0.01	1.00
20) Social Movements	1.67	2.47	0.01	0.04	-0.01	-0.07	-0.08	0.23	0.18	0.09	0.00	0.03	-0.04	-0.01	0.05	0.19	-0.06	0.05	0.02	-0.02	0.06

Correlations with absolute values above .03 are significant at the .05 level

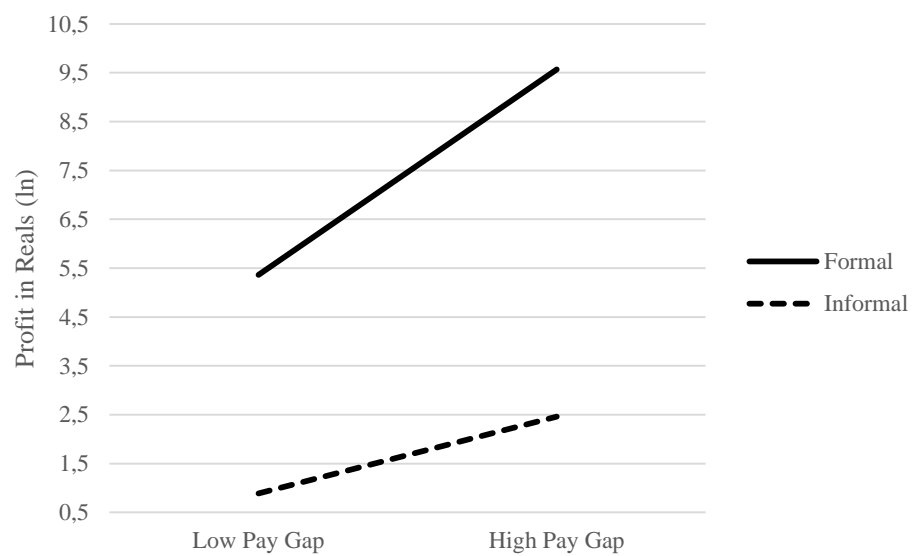
Race predominance dummy variables omitted from table for space reasons

**Table II. Coefficients and Standard Errors of Models Predicting Performance**

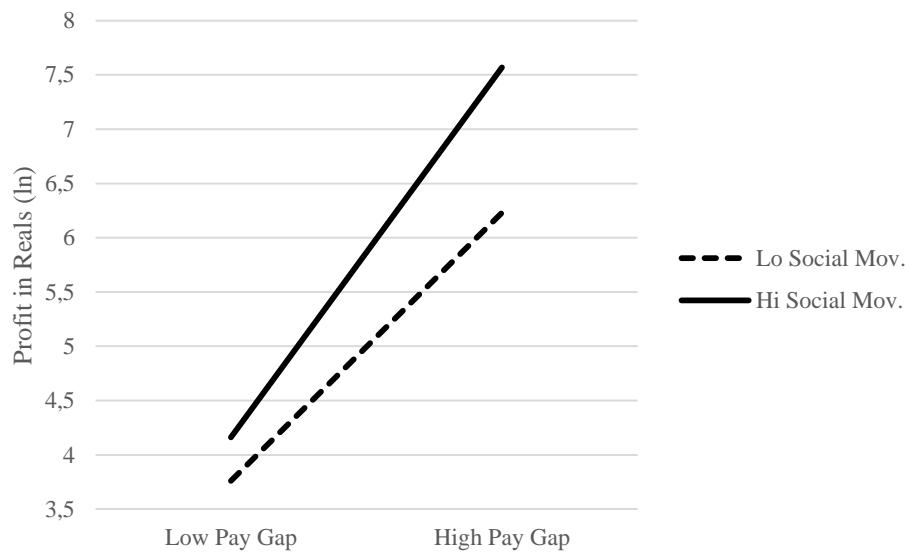
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	$\beta$ (SE)	$\beta$ (SE)	$\beta$ (SE)	$\beta$ (SE)	$\beta$ (SE)	$\beta$ (SE)
Age of Business	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)
Area – Urban	-1.70** (0.17)	-1.68** (0.17)	-1.59** (0.16)	-1.65** (0.16)	-1.65** (0.16)	-1.56** (0.16)
Area – Rural and Urban	0.03 (0.23)	-0.20 (0.22)	-0.11 (0.21)	-0.32 (0.22)	-0.14 (0.22)	-0.19 (0.21)
Technology	0.53** (0.15)	0.33* (0.14)	0.34* (0.14)	0.32* (0.14)	0.32* (0.14)	0.33* (0.13)
Size	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)
Percent Female	-4.33** (0.25)	-3.28** (0.24)	-3.22** (0.24)	-3.27** (0.24)	-3.27** (0.24)	-3.22** (0.24)
Age – Adults	1.52** (0.34)	1.12** (0.32)	1.10** (0.31)	1.06** (0.32)	1.16** (0.32)	1.08** (0.31)
Age – Elderly	0.21 (0.49)	0.09 (0.46)	0.08 (0.45)	0.06 (0.46)	0.12 (0.46)	0.07 (0.45)
Age – no predominance	0.77 (0.49)	0.60 (0.47)	0.61 (0.45)	0.60 (0.46)	0.64 (0.46)	0.63 (0.45)
Race of Members	Incl.	Incl.	Incl.	Incl.	Incl.	Incl.
Number of Products (ln)	0.50** (0.07)	0.39** (0.07)	0.40** (0.06)	0.39** (0.07)	0.40** (0.07)	0.39** (0.06)
Association	2.25** (0.16)	1.96*** (0.16)	-3.56** (0.57)	1.98** (0.16)	1.94** (0.16)	-3.08** (0.60)
Cooperative	3.68** (0.27)	3.22** (0.26)	-2.45** (0.62)	3.18** (0.26)	3.20** (0.26)	-1.99** (0.65)
Trading Company	1.95* (0.80)	1.63* (0.76)	-3.84** (0.93)	1.75* (0.75)	1.70* (0.75)	-3.26** (0.94)
New Venture	-0.10 (0.18)	-0.07 (0.17)	-0.03 (0.17)	-0.09 (0.17)	2.23** (0.58)	0.86 (0.59)
Social Movements	0.21** (0.03)	0.20** (0.03)	0.21** (0.03)	-0.29* (0.12)	0.21** (0.03)	-0.15 (0.12)
Pay Disparity (ln)		1.11** (0.05)	1.64** (0.06)	0.97** (0.06)	1.30** (0.07)	1.58** (0.08)
Pay Disp. X Informal			-1.03** (0.10)			-0.94** (0.11)
Pay Disp. X Social Mov.				0.09** (0.02)		0.07** (0.02)
Pay Disp. X New Vent.					-0.43** (0.10)	-0.17+ (0.10)
R-squared	0.22	0.29	0.33	0.29	0.30	0.33
F-value	85.99**	115.73**	131.23**	112.01**	113.83**	121.22**

\*\* p<0.01, \* p<0.05, + p<0.1  
N=5,945

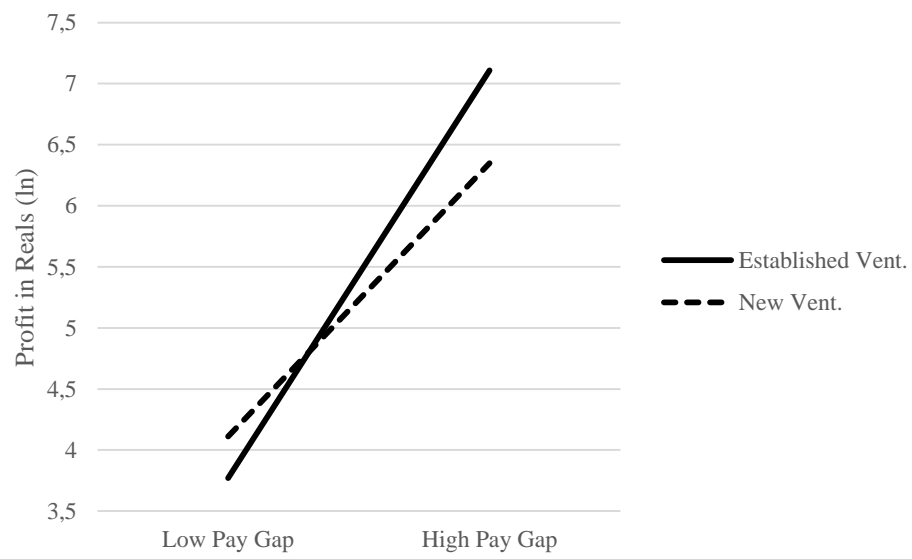




**Figure 1**  
**Plotted Interaction between Pay Gap and Informality**



**Figure 2**  
**Plotted Interaction between Pay Gap and Social Movements**



**Figure 3**  
**Plotted Interaction between Pay Gap and New Venture**