Business Administration and Business Economics

An Analysis of a Duopoly with Incomplete Information

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Abstract: In this paper we analyze the case of two firms A and B, each competing with the other under conditions of incomplete information. Thre analysed cases are: company A assume one of the following roles: either ignore the firm B or leading production or leading price acting as if B knows its intention and firm B acts either ignoring company A, or as satellite of production or satellite of price acting as if A knows its intention.

Keywords: duopoly; Cournot; Stackelberg; leader

1. Introduction

The duopoly is a market situation where there are two suppliers of a good unsubstituted and a sufficient number of consumers.

Considering below, two competitors A and B which produce the same normal good, we propose analyzing their activity in response to the work of each other company.

Each of them, when it set the production level and the selling price will cover the production and price of the other company. If one of the two firms will set price or quantity produced first, the other adjusting for it, it will be called price leader or leader of production respectively, the second company called the satellite price, or satellite production respectively.

The approach of the following considerations will be that company A will assume a role: either ignore the firm B or leading production or leading price acting as if B knows its intention and firm B acts either ignoring company A, or as satellite of production or satellite of price acting as if A knows its intention.

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Let therefore two producers, the demand inverse function: p(Q)=a-bQ, a,b>0, total costs of A and B being $TC_A(Q)=\alpha Q+\gamma$, $TC_B(Q)=\beta Q+\delta$, $\alpha,\beta,\gamma,\delta\geq 0$ where Q is the production. We have now: $MC_A=\alpha$ and $MC_B=\beta$ - marginal costs of each firm.

2. The Case of Cournot Equilibrium

In this case, both companies A and B act independently of each other and at the same time.

Considering the profits of both firms, we have:

$$\Pi_A(Q_A)=[a-b(Q_A+Q_B)]Q_A-(\alpha Q_A+\gamma)=-bQ_A^2+(a-bQ_B-\alpha)Q_A-\gamma$$

$$\Pi_B(Q_B)=[a-b(Q_A+Q_B)]Q_B-(\beta Q_B+\delta)=-bQ_B^2+(a-bQ_A-\beta)Q_B-\delta$$

In order to maximize the profits, we must have:

$$\frac{\partial\Pi_A(Q_A)}{\partial Q_A}=-2bQ_A+a-bQ_B-\alpha=0$$

$$\frac{\partial\Pi_B(Q_B)}{\partial Q_B}=-2bQ_B+a-bQ_A-\beta=0$$

from where (noting with C from Cournot):

$$Q_A^{(C)}=\frac{a-2\alpha+\beta}{3b},\ Q_B^{(C)}=\frac{a+\alpha-2\beta}{3b}$$

The price will be:

$$p^{(C)}\left(Q_A^{(C)}+Q_B^{(C)}\right)=a-b\left(Q_A^{(C)}+Q_B^{(C)}\right)=\frac{a+\alpha+\beta}{3}$$

and the profits:

$$\Pi_A^{(C)}\left(Q_A^{(C)}\right)=-bQ_A^{(C)2}+\left(a-bQ_B^{(C)}-\alpha\right)Q_A^{(C)}-\gamma=\frac{(a-2\alpha+\beta)^2}{9b}-\gamma$$

$$\Pi_B^{(C)}\left(Q_B^{(C)}\right)=-bQ_B^{(C)2}+\left(a-bQ_A^{(C)}-\beta\right)Q_B^{(C)}-\delta=\frac{(a+\alpha-2\beta)^2}{9b}-\delta$$

We have now (noting $D^{(C)}=\Pi_A^{(C)}\left(Q_A^{(C)}\right)-\Pi_B^{(C)}\left(Q_B^{(C)}\right)$ - the difference between two profits):

$$D^{(C)} = \Pi_A^{(C)}\left(Q_A^{(C)}\right) - \Pi_B^{(C)}\left(Q_B^{(C)}\right) = \frac{(\alpha-\beta)(-2a+\alpha+\beta)}{3b} - \gamma + \delta$$

3. The Case of Stackelberg Production Leader and Satellite in Terms of Production

In this case, the company A assumes the role of production leader and company B recognizes this.

Because the company A is a leader of production, it will produce Q_A units of a good. The company B will adjust production after A, in response to its leadership, producing $Q_B=f(Q_A)$ units of good (f - the reaction function). Because the selling price depends on the total quantity of products reached the market, we have $p=p(Q_A+Q_B)$ – the price per unit of good.

On the other hand, the company A must establish a level of production depending on the reaction of firm B, because it will determine through the production realized the selling price of the product. Similarly, the company B will adjust its production levels according to A, because at a higher or lower level, the price will change and therefore profit of the company ([1]).

Let therefore, the profit of the production leader:

$$\Pi_A(Q_A) = [a - b(Q_A + Q_B)]Q_A - (\alpha Q_A + \gamma) = -bQ_A^2 + (a - bQ_B - \alpha)Q_A - \gamma$$

Since $Q_B=f(Q_A)$ we have:

$$\Pi_A(Q_A) = -bQ_A^2 + (a - bf(Q_A) - \alpha)Q_A - \gamma$$

Consider also the profit of the satellite:

$$\Pi_B(Q_B) = [a - b(Q_A + Q_B)]Q_B - (\beta Q_B + \delta) = -bQ_B^2 + (a - bQ_A - \beta)Q_B - \delta$$

The extreme condition for the profit of B is:

$$\frac{\partial \Pi_B(Q_B)}{\partial Q_B} = -2bQ_B + a - bQ_A - \beta = 0$$

therefore:

$$Q_B = f(Q_A) = \frac{a-\beta}{2b} - \frac{Q_A}{2}$$

Now the profit of A will become:

$$\Pi_A(Q_A) = -\frac{bQ_A^2}{2} + \frac{a-2\alpha+\beta}{2}Q_A - \gamma$$

and the condition for maximizing:

$$\frac{\partial \Pi_A(Q_A)}{\partial Q_A} = -bQ_A + \frac{a-2\alpha+\beta}{2} = 0$$

therefore (noting with PL from production leader):

$$Q_A^{(PL)} = \frac{a-2\alpha+\beta}{2b},\ Q_B^{(PL)} = f\left(Q_A^{(PL)}\right) = \frac{a+2\alpha-3\beta}{4b}$$

and the price will be:

$$p^{(PL)}\left(Q_A^{(PL)} + Q_B^{(PL)}\right) = a - b\left(Q_A^{(PL)} + Q_B^{(PL)}\right) = \frac{a+2\alpha+\beta}{4}$$

The profits of both firms A and B are:

$$\Pi_A^{(PL)}\left(Q_A^{(PL)}\right) = -bQ_A^{(PL)2} + \left(a - bQ_B^{(PL)} - \alpha\right)Q_A^{(PL)} - \gamma = \frac{(a-2\alpha+\beta)^2}{8b} - \gamma$$

respectively:

$$\Pi_B^{(PL)}\left(Q_B^{(PL)}\right) = -bQ_B^{(PL)2} + \left(a - bQ_A^{(PL)} - \beta\right)Q_B^{(PL)} - \delta = \frac{(a+2\alpha-3\beta)^2}{16b} - \delta$$

Because A assumes that it is leader of production, we must have: $Q_A^{(PL)} > Q_B^{(PL)}$ that is: $\frac{a-2\alpha+\beta}{2b} > \frac{a+2\alpha-3\beta}{4b} \Leftrightarrow a > 6\alpha - 5\beta$.

We have now (noting $D^{(PL)} = \Pi_A^{(PL)}\left(Q_A^{(PL)}\right) - \Pi_B^{(PL)}\left(Q_B^{(PL)}\right)$ - the difference between two profits):

$$D^{(PL)} = \Pi_A^{(PL)}\left(Q_A^{(PL)}\right) - \Pi_B^{(PL)}\left(Q_B^{(PL)}\right) = \frac{a^2 - 2(6\alpha-5\beta)a + 4\alpha^2 + 4\alpha\beta - 7\beta^2}{16b} - \gamma + \delta$$

4. The Case of Stackelberg Price Leader and Satellite in Terms of Price

In this case, the company A assumes the role of price leader and company B recognizes this.

It is obvious that, regardless of the satellite firm behavior, the final sale price will be the same for the two companies, otherwise the demand being moving to the company with the lowest price.

Let the price being p>0 – fixed in the final.

The profit functions of the two companies are therefore:

$$\Pi_A(Q_A) = pQ_A - (\alpha Q_A + \gamma) = (p-\alpha)Q_A - \gamma$$

$$\Pi_B(Q_B) = pQ_B - (\beta Q_B + \delta) = (p-\beta)Q_B - \delta$$

From these formulas we have the necessary condition that $p>\alpha$, $p>\beta$ (otherwise $\Pi_A(Q_A)<0$ or $\Pi_B(Q_B)<0$).

Because both profit functions are of first degree in Q and $p-\alpha>0$, $p-\beta>0$ they reach the maximum at infinity.

In this case (with linear total cost of B) the production of B will be, for the moment, indeterminate, let say $Q_B=q>0$.

Meanwhile, the company leadership is aware that setting a selling price p will lead a production Q_B of the satellite firm, so in terms of a demand curve $Q=Q(p)$ its offer will be restricted to $Q_A(p)=Q-Q_B=Q(p)-q=\frac{a-p}{b}-q=\frac{a-bq}{b}-\frac{1}{b}p$. Because $Q_A(p)>0$ we must have: $q<\frac{a-p}{b}$. If $q\geq\frac{a-p}{b}$ the production of A: $Q_A(p)\leq 0$, therefore A gives up at the price leader role.

Its profit function becomes:

$$\Pi_A(p) = (p-\alpha)Q_A(p) - \gamma = (p-\alpha)\left(\frac{a-bq}{b} - \frac{1}{b}p\right) - \gamma =$$

$$-\frac{1}{b}p^2 + \frac{a-bq+\alpha}{b}p - \frac{\alpha(a-bq)+b\gamma}{b}$$

The profit maximization condition of A is therefore:

$$\frac{\partial \Pi_A(p)}{\partial p} = -\frac{2}{b}p + \frac{a-bq+\alpha}{b} = 0$$

from where (noting with PP from production price):

$$p^{(PP)} = \frac{a-bq+\alpha}{2}$$

From this relation, because $q < \frac{a - p^{(PP)}}{b}$ we have $p^{(PP)} = \frac{a - bq + \alpha}{2} > \frac{a - b\frac{a - p^{(PP)}}{b} + \alpha}{2} = \frac{p^{(PP)} + \alpha}{2}$ that is: $p^{(PP)} > \alpha$ which satisfies the initial condition on the price.

Finally:

$$Q_A^{(PP)} = \frac{a - bq}{b} - \frac{1}{b}p^{(PP)} = \frac{a - bq - \alpha}{2b},\ Q_B^{(PP)} = q$$

The profits of both firms A and B are:

$$\Pi_A^{(PP)}\left(Q_A^{(PP)}\right) = \left(p^{(PP)} - \alpha\right)Q_A^{(PP)} - \gamma = \frac{(a - bq - \alpha)^2}{4b} - \gamma$$

respectively:

$$\Pi_B^{(PP)}\left(Q_B^{(PP)}\right) = \Pi_B^{(PP)}(q) = \left(p^{(PP)} - \beta\right)Q_B^{(PP)} - \delta = -\frac{b}{2}\left(q - \frac{a + \alpha - 2\beta}{2b}\right)^2 + \frac{(a + \alpha - 2\beta)^2 - 8b\delta}{8b}$$

Because $\Pi_B^{(PP)}$ is a second degree function in q we have now the following cases:

- $(a + \alpha - 2\beta)^2 < 8b\delta$ implies that $\Pi_B^{(PP)}(q) < 0\ \forall q \in \mathbf{R}$ therefore the company B will lose, therefore it not accept the role of price satellite
- $(a + \alpha - 2\beta)^2 = 8b\delta$ implies that the maximum of the profit of B will be $\Pi_B^{(PP)}(q) = 0$ for $q = \frac{a + \alpha - 2\beta}{2b}$
- $(a + \alpha - 2\beta)^2 > 8b\delta$ implies that $\Pi_B^{(PP)}$ has two real roots q_1, $q_2 \in \mathbf{R}$. Because $q_1 q_2 = \frac{2\delta}{b} > 0$ we have that $q_1, q_2 < 0$ or $q_1, q_2 > 0$. If $q_1, q_2 < 0 \Leftrightarrow a + \alpha - 2\beta < 0$, the parabola having negative dominant coefficient, we find that for $q > 0$: $\Pi_B^{(PP)}(q) < 0$.

If $q_1,q_2>0 \Leftrightarrow a+\alpha-2\beta>0$ the maximum of the second degree function is reached for: $q=\frac{a+\alpha-2\beta}{2b}$ and is $\Pi_B^{(PP)}\left(Q_B^{(PP)}\right)=\frac{(a+\alpha-2\beta)^2}{8b}-\delta$.

Also, in this case: $\Pi_A^{(PP)}\left(Q_A^{(PP)}\right)=\frac{(a-3\alpha+2\beta)^2}{16b}-\gamma$ and it must satisfy also: $(a-3\alpha+2\beta)^2>16b\gamma$

The productions will be: $Q_A^{(PP)}=\frac{a-3\alpha+2\beta}{4b}$, $Q_B^{(PP)}=\frac{a+\alpha-2\beta}{2b}$ and the price: $p^{(PP)}=\frac{a+\alpha+2\beta}{4}$.

Like a conclusion, for B in order to recognize a role of price leader to A and also A to assume this role, they must satisfy the conditions:

- $(a+\alpha-2\beta)^2>8b\delta$
- $a+\alpha-2\beta>0$
- $a-3\alpha+2\beta>0$
- $(a-3\alpha+2\beta)^2>16b\gamma$

We have now (noting $D^{(PP)}=\Pi_A^{(PP)}\left(Q_A^{(PP)}\right)-\Pi_B^{(PP)}\left(Q_B^{(PP)}\right)$ - the difference between two profits):

$$D^{(PP)}=\Pi_A^{(PP)}\left(Q_A^{(PP)}\right)-\Pi_B^{(PP)}\left(Q_B^{(PP)}\right)=\frac{-a^2-2(5\alpha-6\beta)a+7\alpha^2+4\alpha\beta+4\beta^2}{16b}-\gamma+\delta$$

5. The Case When A Ignores B, but B Considers A as Production Leader

In this case from sections 2 and 3, we have (noting with C,PL from Cournot and production leader):

$$Q_A^{(C,PL)}=\frac{a-2\alpha+\beta}{3b},\ Q_B^{(C,PL)}=\frac{a+2\alpha-3\beta}{4b}$$

The real price will be:

$$p^{(C,PL)}\left(Q_A^{(C,PL)}+Q_B^{(C,PL)}\right)=a-b\left(Q_A^{(C,PL)}+Q_B^{(C,PL)}\right)=\frac{5a+2\alpha+5\beta}{12}$$

and the profits:

$$\Pi_A^{(C,PL)}\left(Q_A^{(C,PL)}\right)=-bQ_A^{(C,PL)2}+\left(a-bQ_B^{(C,PL)}-\alpha\right)Q_A^{(C,PL)}-\gamma=\frac{5(a-2\alpha+\beta)^2}{36b}-\gamma$$

respectively:

$$\Pi_B^{(C,PL)}\left(Q_B^{(C,PL)}\right)=-bQ_B^{(C,PL)2}+\left(a-bQ_A^{(C,PL)}-\beta\right)Q_B^{(C,PL)}-\delta=\frac{(a+2\alpha-3\beta)(5a+2\alpha-7\beta)}{48b}-\delta$$

We have now (noting $D^{(C,PL)}=\Pi_A^{(C,PL)}\left(Q_A^{(C,PL)}\right)-\Pi_B^{(C,PL)}\left(Q_B^{(C,PL)}\right)$ - the difference between two profits):

$$D^{(C,PL)}=\Pi_A^{(C,PL)}\left(Q_A^{(C,PL)}\right)-\Pi_B^{(C,PL)}\left(Q_B^{(C,PL)}\right)=\frac{5a^2-2(58\alpha-53\beta)a+68\alpha^2-20\alpha\beta-43\beta^2}{144b}-\gamma+\delta$$

6. The Case when A Ignores B, but B Considers A as Price Leader

In this case from sections 2 and 4 we have (noting with C,PP from Cournot and production price):

$$Q_A^{(C,PP)}=\frac{a-2\alpha+\beta}{3b},\ Q_B^{(C,PP)}=\frac{a+2\alpha-3\beta}{4b}$$

The real price will be:

$$p^{(C,PP)}\left(Q_A^{(C,PP)}+Q_B^{(C,PP)}\right)=a-b\left(Q_A^{(C,PP)}+Q_B^{(C,PP)}\right)=\frac{a+\alpha+4\beta}{6}$$

and the profits:

$$\Pi_A^{(C,PP)}\left(Q_A^{(C,PP)}\right)=-bQ_A^{(C,PP)2}+\left(a-bQ_B^{(C,PP)}-\alpha\right)Q_A^{(C,PP)}-\gamma=\frac{(a-5\alpha+4\beta)(a-2\alpha+\beta)}{18b}-\gamma$$

respectively:

$$\Pi_B^{(C,PP)}\left(Q_B^{(C,PP)}\right)=-bQ_B^{(C,PP)2}+\left(a-bQ_A^{(C,PP)}-\beta\right)Q_B^{(C,PP)}-\delta=\frac{(a+\alpha-2\beta)^2}{12b}-\delta$$

We have now (noting $D^{(C,PP)}=\Pi_A^{(C,PP)}\left(Q_A^{(C,PP)}\right)-\Pi_B^{(C,PP)}\left(Q_B^{(C,PP)}\right)$ - the difference between two profits):

$$D^{(C,PP)}=\Pi_A^{(C,PP)}\left(Q_A^{(C,PP)}\right)-\Pi_B^{(C,PP)}\left(Q_B^{(C,PP)}\right)=$$
$$\frac{-a^2-2(10\alpha-11\beta)a+17\alpha^2-14\alpha\beta-4\beta^2}{36b}-\gamma+\delta$$

7. The Case when A is A Production Leader, but B Ignores A

In this case from section 2 and 3 we have (noting with PL,C from production leader and Cournot):

$$Q_A^{(PL,C)}=\frac{a-2\alpha+\beta}{2b},\ Q_B^{(PL,C)}=\frac{a+\alpha-2\beta}{3b}$$

The real price will be:

$$p^{(PL,C)}\left(Q_A^{(PL,C)}+Q_B^{(PL,C)}\right)=a-b\left(Q_A^{(PL,C)}+Q_B^{(PL,C)}\right)=\frac{a+4\alpha+\beta}{6}$$

and the profits:

$$\Pi_A^{(PL,C)}\left(Q_A^{(PL,C)}\right)=-bQ_A^{(PL,C)2}+\left(a-bQ_B^{(PL,C)}-\alpha\right)Q_A^{(PL,C)}-\gamma=\frac{(a-2\alpha+\beta)^2}{12b}-\gamma$$

respectively:

$$\Pi_B^{(PL,C)}\left(Q_B^{(PL,C)}\right)=-bQ_B^{(PL,C)2}+\left(a-bQ_A^{(PL,C)}-\beta\right)Q_B^{(PL,C)}-\delta=$$
$$\frac{(a+4\alpha-5\beta)(a+\alpha-2\beta)}{18b}-\delta$$

We have now (noting $D^{(PL,C)}=\Pi_A^{(PL,C)}\left(Q_A^{(PL,C)}\right)-\Pi_B^{(PL,C)}\left(Q_B^{(PL,C)}\right)$ - the difference between two profits):

$$D^{(PL,C)}=\Pi_A^{(PL,C)}\left(Q_A^{(PL,C)}\right)-\Pi_B^{(PL,C)}\left(Q_B^{(PL,C)}\right)=$$
$$\frac{a^2-2(11\alpha-10\beta)a+4\alpha^2+14\alpha\beta-17\beta^2}{36b}-\gamma+\delta$$

8. The Case when A is a Production Leader, but B Considers A as Price Leader

In this case from section 2, we have (noting with PL,PP from production leader and production price):

$$Q_A^{(PL,PP)} = \frac{a-2\alpha+\beta}{2b},\ Q_B^{(PL,PP)} = \frac{a+\alpha-2\beta}{2b}$$

The real price will be:

$$p^{(PL,PP)}\left(Q_A^{(PL,PP)} + Q_B^{(PL,PP)}\right) = a - b\left(Q_A^{(PL,PP)} + Q_B^{(PL,PP)}\right) = \frac{\alpha+\beta}{2}$$

and the profits:

$$\Pi_A^{(PL,PP)}\left(Q_A^{(PL,PP)}\right) = -bQ_A^{(PL,PP)2} + \left(a - bQ_B^{(PL,PP)} - \alpha\right)Q_A^{(PL,PP)} - \gamma = \frac{\beta-\alpha}{2} - \gamma$$

respectively:

$$\Pi_B^{(PL,PP)}\left(Q_B^{(PL,PP)}\right) = -bQ_B^{(PL,PP)2} + \left(a - bQ_A^{(PL,PP)} - \beta\right)Q_B^{(PL,PP)} - \delta = \frac{\alpha-\beta}{2} - \delta$$

We have now (noting $D^{(PL,PP)} = \Pi_A^{(PL,PP)}\left(Q_A^{(PL,PP)}\right) - \Pi_B^{(PL,PP)}\left(Q_B^{(PL,PP)}\right)$ - the difference between two profits):

$$D^{(PL,PP)} = \Pi_A^{(PL,PP)}\left(Q_A^{(PL,PP)}\right) - \Pi_B^{(PL,PP)}\left(Q_B^{(PL,PP)}\right) = \beta - \alpha - \gamma + \delta$$

9. The Case when A is a Price Leader, but B Ignores A

In this case from section 2, we have (noting with PP,C from production price and Cournot):

$$Q_A^{(PP,C)} = \frac{a-3\alpha+2\beta}{4b},\ Q_B^{(PP,C)} = \frac{a+\alpha-2\beta}{3b}$$

The real price will be:

$$p^{(PP,C)}\left(Q_A^{(PP,C)} + Q_B^{(PP,C)}\right) = a - b\left(Q_A^{(PP,C)} + Q_B^{(PP,C)}\right) = \frac{5a+5\alpha+2\beta}{12}$$

and the profits:

$$\Pi_A^{(PP,C)}\left(Q_A^{(PP,C)}\right) = -bQ_A^{(PP,C)2} + \left(a - bQ_B^{(PP,C)} - \alpha\right)Q_A^{(PP,C)} - \gamma = \frac{(5a - 7\alpha + 2\beta)(a - 3\alpha + 2\beta)}{48b} - \gamma$$

respectively:

$$\Pi_B^{(PP,C)}\left(Q_B^{(PP,C)}\right) = -bQ_B^{(PP,C)2} + \left(a - bQ_A^{(PP,C)} - \beta\right)Q_B^{(PP,C)} - \delta = \frac{5(a + \alpha - 2\beta)^2}{36b} - \delta$$

We have now (noting $D^{(PP,C)} = \Pi_A^{(PP,C)}\left(Q_A^{(PP,C)}\right) - \Pi_B^{(PP,C)}\left(Q_B^{(PP,C)}\right)$ - the difference between two profits):

$$D^{(PP,C)} = \Pi_A^{(PP,C)}\left(Q_A^{(PP,C)}\right) - \Pi_B^{(PP,C)}\left(Q_B^{(PP,C)}\right) = \frac{-5a^2 + 2(-53\alpha + 58\beta)a + 43\alpha^2 + 20\alpha\beta - 68\beta^2}{144b} - \gamma + \delta$$

10. The Case When A is A Price Leader, but B Considers A as Production Leader

In this case from section 2, we have (noting with PP,PL from production price and production leader):

$$Q_A^{(PP,PL)} = \frac{a - 3\alpha + 2\beta}{4b}, \quad Q_B^{(PP,PL)} = \frac{a + 2\alpha - 3\beta}{4b}$$

The real price will be:

$$p^{(PP,PL)}\left(Q_A^{(PP,PL)} + Q_B^{(PP,PL)}\right) = a - b\left(Q_A^{(PP,PL)} + Q_B^{(PP,PL)}\right) = \frac{2a + \alpha + \beta}{4}$$

and the profits:

$$\Pi_A^{(PP,PL)}\left(Q_A^{(PP,PL)}\right) = -bQ_A^{(PP,PL)2} + \left(a - bQ_B^{(PP,PL)} - \alpha\right)Q_A^{(PP,PL)} - \gamma = \frac{(2a - 3\alpha + \beta)(a - 3\alpha + 2\beta)}{16b} - \gamma$$

respectively:

$$\Pi_B^{(PP,PL)}\left(Q_B^{(PP,PL)}\right) = -bQ_B^{(PP,PL)2} + \left(a - bQ_A^{(PP,PL)} - \beta\right)Q_B^{(PP,PL)} - \delta = \frac{(2a + \alpha - 3\beta)(a + 2\alpha - 3\beta)}{16b} - \delta$$

We have now (noting $D^{(PP,PL)}=\Pi_A^{(PP,PL)}\left(Q_A^{(PP,PL)}\right)-\Pi_B^{(PP,PL)}\left(Q_B^{(PP,PL)}\right)$ - the difference between two profits):

$$D^{(PP,PL)}=\Pi_A^{(PP,PL)}\left(Q_A^{(PP,PL)}\right)-\Pi_B^{(PP,PL)}\left(Q_B^{(PP,PL)}\right)=\frac{7(\alpha-\beta)(-2a+\alpha+\beta)}{16b}-\gamma+\delta$$

11. Theory of Games in the Case of Duopoly

Of the above, we have nine cases representing the situation in which are the two companies. The question is the decision of each of them not knowing the competitor's decision, in order to obtain a great difference of the profits.

Let therefore, the following zero sum game:

Table 1

A/B	Cournot	production satellite	price satellite	min
Cournot	$D^{(C)}$	$D^{(C,PL)}$	$D^{(C,PP)}$	$v_1=\min\left(D^{(C)},D^{(C,PL)},D^{(C,PP)}\right)$
production leader	$D^{(PL,C)}$	$D^{(PL)}$	$D^{(PL,PP)}$	$v_2=\min\left(D^{(PL,C)},D^{(PL)},D^{(PL,PP)}\right)$
price leader	$D^{(PP,C)}$	$D^{(PP,PL)}$	$D^{(PP)}$	$v_3=\min\left(D^{(PP,C)},D^{(PP,PL)},D^{(PP)}\right)$
max	$w_1=\max\left(D^{(C)},D^{(PL,C)},D^{(PP,C)}\right)$	$w_2=\max\left(D^{(C,PL)},D^{(PL)},D^{(PP,PL)}\right)$	$w_3=\max\left(D^{(C,PP)},D^{(PL,PP)},D^{(PP)}\right)$	W=min $\{w_1,w_2,w_3\}$ /max $\{v_1.v_2,v_3\}$=V

Applying the Wald criterion we obtain the best choice of A corresponding to the value V and the best choice of B corresponding to the value W.

Example

Let two producers, the demand inverse function: $p(Q)=100-Q$, total costs of A and B being $TC_A(Q)=\alpha Q+\gamma$, $TC_B(Q)=\beta Q+\gamma$, $\alpha,\beta,\gamma\geq 0$ where Q is the production.

We have the following game:

Table 2

A/B	Cournot	production satellite	price satellite	min
Cournot	$\frac{(\alpha-10)(\alpha-190)}{3}$	$\frac{\alpha(\alpha-290)+4825}{4}$	$\frac{7}{16}\alpha^2-65\alpha+100$	v_1
production leader	$\frac{\alpha(17\alpha-2950)+37925}{36}$	$\frac{\alpha(17\alpha-2140)+11600}{36}$	$\frac{\alpha(\alpha-515)+7075}{9}$	v_2
price leader	$10-\alpha$	$\frac{43}{144}\alpha^2-\frac{650}{9}\alpha+\frac{3700}{9}$	$\frac{7(\alpha-10)(\alpha-190)}{16}$	v_3
max	w_1	w_2	w_3	W / V

Using the computer for simulating in the cases: $\beta=10$, $\alpha\in[0,20]$ with step 1 we obtain:

- $\alpha=0$ - A – Cournot – V=322.2, B – price satellite – W=322.2
- $\alpha=1$ - A – Cournot – V=263.3, B – price satellite – W=263.3
- $\alpha=2$ - A – Cournot – V=205.2, B – price satellite – W=205.2
- $\alpha=3$ - A – Cournot – V=148.1, B – price satellite – W=148.1
- $\alpha=4$ - A – Cournot – V=92, B – price satellite – W=92
- $\alpha=5$ - A – Cournot – V=36.81, B – price satellite – W=36.81
- $\alpha=6$ - A – production leader – V=4, B – price satellite – W=4
- $\alpha=7$ - A – production leader – V=3, B – price satellite – W=3
- $\alpha=8$ - A – production leader – V=2, B – price satellite – W=2
- $\alpha=9$ - A – production leader – V=1, B – price satellite – W=1
- $\alpha=10$ - A – production leader – V=0, B – price satellite – W=0
- $\alpha=11$ - A – production leader – V=-1, B – price satellite – W=-1
- $\alpha=12$ - A – production leader – V=-2, B – price satellite – W=-2
- $\alpha=13$ - A – production leader – V=-3, B – price satellite – W=-3
- $\alpha=14$ - A – production leader – V=-4, B – price satellite – W=-4
- $\alpha=15$ - A – production leader – V=-47.22, B – Cournot – W=-47.22
- $\alpha=16$ - A – production leader – V=-101, B – Cournot – W=-101
- $\alpha=17$ - A – production leader – V=-154.6, B – Cournot – W=-154.6

- α=18 - A – production leader – V=-207.9, B – Cournot – W=-207.9
- α=19 - A – production leader – V=-261, B – Cournot – W=-261
- α=20 - A – production leader – V=-313.9, B – Cournot – W=-313.9

We can see that for a marginal price of A it will have an advantage in front of B, but in order to have a maximal difference it must ignore for $\alpha \leq 5$ what B will do and for $\alpha \geq 6$ it will adopt a position of production leader. For $\alpha > 10$, because its marginal cost is greater than that of B it will lose but in order to minimize the difference between it and B it must adopt also the position of production leader.

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Women Tourism Entrepreneurs in KwaZulu-Natal, South Africa: Any Way Forward?

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Abstract: This study, done in KwaZulu-Natal, South Africa, sheds light into the challenges facing women entrepreneurs involved in tourism businesses and the opportunities they can harness in the tourism industry, with particular reference to some gender nuances. The study collected qualitative and quantitative data from respondents, and the data were analysed using content and descriptive analyses respectively. The challenges facing these women entrepreneurs, identified by this study, include lack of financial capital, low business capability, problem of size and scope, racial issues and traditional perceptions, and imperfect business location. Some opportunities for growth identified are local municipality support, internet marketing, and formation of business network for self-support and training. This study recommends business skills training for the women entrepreneurs in the areas of sourcing business funding, creating unique value proposition, product excellence, marketing capability, operational excellence and customer service. Although this study was conducted in a South African province, it has implications for women entrepreneurs in sub-Saharan Africa, and beyond.

Keywords: gender in tourism; women in tourism; tourism business; traditional perceptions; sub-Saharan Africa

JEL Classification: J16; L26; O55; R11; Z32

1. Introduction

Much research has been done in developed countries, especially the United States of America and Canada, regarding women entrepreneurs, but very little has been done on this subject in developing nations (Hisrich & Öztürk, 1999). Some studies have been done in Europe, for example, in Greece investigating women's cooperatives (Koutsou, Iakovidou & Gotsinas, 2003; Lassithiotaki & Roubakou, 2014). Regarding women entrepreneurs in the tourism industry, a general study,

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with regard to no nation (Ferguson, 2011) considered empowering women and promoting gender equality in the Tourism industry. Few studies done on women entrepreneurs in developing economies, regarding tourism include those of Hisrich & Öztürk (1999) in Turkey, Bras and Dahles (1998) in Bali, and Gentry (2007), in Belize. It is envisaged that this study, done in South Africa, with respect to women entrepreneurs, will shed more light into the challenges facing women entrepreneurs and the opportunities they can harness in the tourism industry, with particular reference to some gender nuances. Research by Hisrich and Öztürk (1999) in Turkey, indicated that though women entrepreneurs in Turkey showed many similarities with others in other nations, there are differences in aspects such as what motivated women to start a business and challenges encountered, due to differences in social structures of a developing nation. These differences reflect particularly in the impact of wage disparity, occupational segregation, and participation in a sector of the economy not supported by the government. These findings cast some doubts that theories around women entrepreneurs in developed nations need to be carefully evaluated before adapting them to developing economies. This study takes an African perspective to women entrepreneurship in tourism.

The authors posit that in the South Africa post-apartheid era, with the opening up of the tourism industry to the world, women in general, and black women in particular have not derived the full socio-economic benefits of the tourism industry's new dispensation. Women do get involved or employed in the tourism industry, but the level of involvement is low and relatively insignificant, as most are employed in the low-skilled sector of the industry such as housekeeping, vendor, cook assistants, and waitressing, etc. Large, medium and small businesses are mostly owned by male actors, with few micro businesses owned by women. Black women who are already in tourism businesses face racial and gender discrimination even in the new democratic government which deter them from participating fully in tourism entrepreneurship, with more obstacles in their way in the form of twisted cultural practices, traditional stereotypes, difficulty in accessing financial assistance from banks and microfinance/microcredit institutions, land ownership, etc. According to Statistics South Africa (2015), out of about 55 million South Africans, there are more than one million females than males, with females numbering just over 28 million and men numbering just below 27 million. This population distribution is true across all racial groups in South Africa (Black Africans, coloured, Indian/Asian, and Whites). In 2015 (Statistics South Africa), KwaZulu-Natal province had the second highest share of the total population (about 20%) behind Gauteng province (24%) and ahead of Eastern Cape province (about 13%). Gauteng Province is more urbanised than KwaZulu-Natal province, hence KwaZulu-Natal province is chosen for this study as cultural and gender nuances will be more evident in this province. There is a paucity of study undertaken on gender, tourism and development, globally, but with particular reference to South Africa. This shows that participation of women in tourism, globally and in South Africa is less significant in academic research around entrepreneurship.

In South Africa, tourism has been earmarked by the government (Department of Environmental Affairs and Tourism) as one of the industries with huge potential of enhancing economic growth and creating job opportunities (DEAT, 1996), hence tourism entrepreneurship is critical for success. It is high time, problems facing women within the industry is addressed to engender resource equity that is not racially or gender biased.

KwaZulu-Natal is one of the nine provinces in South Africa. The Tourism industry is a key contributor to the South African, and more specifically to the KwaZulu-Natal economy. According to South African Tourism (2016), comparing total tourists arrivals, excluding transit tourists in South Africa, a grand total of over one million tourist arrivals was recorded between January 2015 and January 2016, while a grand total of about 878, 000 tourists arrivals was recorded between January 2014 to January 2015 (a positive difference of 15.4%). Focusing on domestic tourism indicators, KwaZulu-Natal was the second most popular province visited for the period between October to December 2015 (21% of tourists, signifying high tourism potential), behind Limpopo (25%) and ahead of Eastern Cape (14%). Trips taken for visiting friends and relatives (VFR) remain the most popular of all trips, and regarding barriers to travel, about two in five of local respondents mentioned unaffordability (42%) while nearly a third stated time constraints (29%) as reasons for not taking a trip in South Africa (South African Tourism, 2016).

2. Literature Review

Eresia-Eke and Gunda (2015) posit that the current state of the global socio-economic situation suggests that individual national economic prosperity, Africa in particular, tends to be measured by the rate of entrepreneurial activities. According to Amos and Alex (2014), economies need to embark on entrepreneurship, which is made possible by emerging individual entrepreneurs (Gurbuz & Aykol, 2008). Entrepreneurship in tourism has attracted quite little research in South Africa, especially as it regards women, hence the value of this study.

International studies on women entrepreneurship are quite few. Koutsou et al. (2003) stated that women embarked on cooperative projects to increase their family income, gain independence, raise their power of control, self-esteem and social status. Regarding women in tourism entrepreneurship, Ferguson (2011) conducted a critical review of global gender and tourism policies, with respect to the World Tourism Organisation and the World Bank and inferred that while tourism development might in theory enhance gender equality and the empowerment of women, a much reframing of national, regional and international policies is needed to maximise this potential. Bras and Dahles (1998) reported that in Sanur, Bali, although small businesses are subject to government regulations aimed at upgrading tourist destinations, the effects of such regulations still differ along gender lines, but leaving enough room for women to exploit upcoming niches in the tourism market, such as selling on the beach and massage services, which are largely informal. Research by Gentry (2007) in Belize, found that tourism employment is exploiting traditional belief system, with particular reference to gender-based segregation, such as low wages, "housewifisation" of labour, and low education levels; but opportunities do exist to challenge this norm.

The study conducted in rural Greece by Lassithiotaki and Roubakou (2014) assessed the basic entrepreneurship dimensions of rural women's cooperatives, such as financial aid and needs, cooperative culture, demographic identities of members, business characteristics, and participation; and found that rural women neither evaluate, use nor develop business opportunities and modern business methods. They therefore advised that rural women should adopt modern business methods and entrepreneurial attitude.

Ligthelm and Wilsenach (1993) attest that the high levels of poverty and unemployment being experienced in South Africa means that much pressure must be exerted on the economy to help increase growth rates and to provide all people with access to economic opportunities. Unfortunately, increasing growth in the country will aim to avoid continuous marginalisation and non-recognition of women and their ability in contributing to the economic growth and in changing the economic status of their families. Goffee and Scase (2007) argue that, in Europe, research into female entrepreneurship and the role of women as proprietors and employers had until comparatively recently been largely neglected as an area of serious academic study, despite the fact that greater numbers of women were then choosing self-employment. Also, there is a paucity of study undertaken on gender, tourism and development in South Africa. This shows that participation of women in tourism, globally and in South Africa is less significant in academic research around entrepreneurship.

This paper argues that the South African economic history and tourism policies guiding development do not clearly articulate the involvement of women in the tourism industry and as such women still feel ignored and discriminated against because of gender, class and racial differences. Likewise entrepreneurship is not benefiting the poorest women instead it enhances the living conditions of the average and the rich people of the country mostly those with good social and economic standing. In Africa (South Africa included), women have not yet been allowed to reach their full potential as citizens due to the "cultural and traditional" practices that largely stipulates that women should be at home, cooking and taking care of children, while their male counterparts go out and work. This study argues that some South African women who are educated still face this dilemma to choose between career and “social acceptance”. Many who venture into the career pathway mostly become employees rather than employer, as society equally perceive men as the “risk-taker”, and not the women. This “lesson” has been ingrained into their minds as girls and it is difficult to change this “moral” as they grow up, hence society dictates what a woman should or should not do. Young and educated South African women are now emancipating themselves from these traditional beliefs and intending to embark more on entrepreneurial activities. This is evidenced by a recent research by Iwu, Ezeuduji, Eresia-Eke and Tengeh (2016) among a South African University students, which found that there is no relationship between gender and culture on the one hand, and entrepreneurial intention on the other hand. However there may be a gap between entrepreneurial intentions and entrepreneurial realisations. Challenges and opportunities facing women who have tourism businesses will therefore be investigated by this research. Iwu et al (2016) found the main barriers to becoming an entrepreneur amongst young South African students to be “lack of financial resources”, “lack of support and assistance”, “unfavourable economic conditions”, lack of profitable opportunities’, and “complex procedures for creating and managing a business”. In a similar vein, Rogerson and Visser (2004) identified factors that constrain the expansion and transformation of the South African tourism industry to include tourism education, human resource skilling, and usage of new Information and Communication Technologies (ICT). World Tourism Organisation (WTO, 2001) found that there is a strong correlation between a woman’s beliefs in having knowledge, skills and experience to start a formal business and her likelihood of starting. Botha, Fairer-Wessels, and Lubbe (2006) alluded that in extreme cases, society members do not patronise businesses that are run by women, due to cultural, attitudinal, and societal barriers. Brown (1997) posited that in developing countries, limited education and training in vocational studies are barriers to running businesses competitively. Collateral to access loans for business growth and poor credit history are also hindrances. Hence, Brown (1997) argued that though males may not be equally affected by these financial barriers, the situation is worse for women.

3. Research Method and Design

This study used the mixed-method approach to collect data from respondents (qualitative and quantitative research methods). Veal (2011) supported the use of mixed-method of research to reinforce the validity and reliability of research. At the first stage of data collection, qualitative method using face-to-face semi-structured interviews was employed, where ten women who own tourism services (such as accommodations, tour operators, tour guides, arts and craft) from four different tourism district municipalities (out of eleven district municipalities) in

KwaZulu-Natal (Ugu, eThekwini, uThungulu, uThukela) were respondents. Checklist of topics used in the semi-structured interview included mainly business challenges, expectations, management and operational issues. A male who co-own a tourism business (accommodation) with his wife, was additionally interviewed to reduce research bias. Women interviewed reflected the major cultural groups in KwaZulu-Natal, South Africa (Black, Indian and White). Interviews were recorded using a voice recorder and a verbatim transcript made from the interview, subsequently. Ethnographic study was also used in this first stage of research, where one of the researchers observed participants in the study from the point of view of the study subjects, over a period on one month, participating in the respondents' business running, with permission from the business owners. Afterwards, the researcher's personal experience was reflected upon and documented (auto-ethnography) as part of the qualitative research documents. Content analysis of the interviews and auto-ethnography documents were done. Recurring themes were highlighted, and discussed in this paper's next section.

The second stage of this research used variables identified from former research in the literature reviewed, the semi-structured interviews and auto-ethnography to measure challenges and opportunities regarding women entrepreneurship. A structured questionnaire with variables' battery that can be categorised under the nature of women involvement in tourism development, ways of meaningful involvement of women in tourism businesses, challenges that women entrepreneurs face in the tourism industry, and tourism policies, was designed. Questionnaire respondents were 170 tourism entrepreneurs, mostly women (purposively selected) who are tourism business managers or partners in the same four district municipalities in KwaZulu-Natal province, as mentioned earlier, and also women officials from these tourism municipal offices to confirm or disconfirm the findings of the semi-structured interviews and auto-ethnography. Out of the 170 questionnaires completed and returned, 150 (135 women out of whom 5 are lesbians, and 15 men) were used for descriptive analysis, employing IBM's SPSS software (IBM Corporation, 2013). Male respondents were selected at random. Questionnaire consisted of a mix of close-ended and open-ended type of questions.

Finally, the researchers integrated the quantitative and qualitative data for results' presentation.

4. Results and Discussion

4.1. Respondents' Profile

Semi-structured interviews involved ten women and one man who own tourism products and services enterprises (such as accommodations, tour operators, tour guides, arts and craft) from four different tourism district municipalities in

KwaZulu-Natal (Ugu, eThekwini, uThungulu, uThukela) as respondents. Table 1 below shows the profile of the respondents for the questionnaire survey.

Table 1. Profile of women in tourism business survey respondents (n=150)

Variable	Category	Frequency (%)
Race	Black	68.6
	Coloured	6.7
	Indians/Asians	18.0
	Whites	6.7
Highest Educational level	Primary	6.7
	Secondary	13.3
	Colleges	13.3
	University	66.7
Women in tourism businesses	Owner	40
	Partner	24
	Manager	36
Kind of business the women surveyed are involved in	Bed and Breakfast	30.2
	Guesthouse	11.3
	Hotel	10
	Restaurant	3.3
	Kiosk	13.3
	Camp site	3.3
	Game reserve	3.3
	Other	25.3

From Table 1, it is evident that black women dominate in the racial groups interviewed reflecting the demographic distribution of KwaZulu-Natal province. Most of these women are well educated and close to half of the sample own their own businesses, while the other respondents were partners or managers. The popular tourism business owned by these women is Bed and Breakfast.

From the survey results, other businesses operated by women in the municipalities include accommodation, craft, transport, dance, food and catering, and tour guiding.

The male tourism business respondents were happy that women are complementing the household income, sharing the burden in the provision of income for the families.

4.2. Challenges Facing Women Running Tourism Businesses

Majority of women interviewed and surveyed did attest that they face many challenges as tourism entrepreneurs or managers, and about 70% of them do not have enough capacity or are not sure of their capacity to run tourism businesses (Table 2).

Table 2. Challenges facing women and their capacity to run tourism business

Variable	Category	Frequency (%)
Women facing challenges	Yes	75
	No	25
Capacity to run business	Yes	31.3
	No	38.7
	Unsure	30

The women who owned tourism businesses were mainly those who used personal savings and their pension to start their businesses. These women are aged as from 35 years, while many of the younger women did not own businesses due to problems of accessing start-up capital. Some challenges facing women in KwaZulu-Natal identified in this research include lack of financial capital, business capability, problem of size and scope, racial issues and traditional perceptions, and business location. These are discussed hereafter.

Lack of financial capital

This include lack of support to source start-up capital and the inability to purchase proper transport vehicles (such as 4x4 safari vans for game drives, cruise boats, coaches, etc.) and office equipment that requires huge capital. Many of the women surveyed or interviewed do not know how to source for business funding. Many women in the industry therefore end up guiding tourists through game reserves and lakes, employed at prices determined by the company that outsourced them, or be employed in hotels, tour operations, restaurants, etc. These women are employed by tourism companies due to their efficient role in service excellence, mostly as front-office staff. Majority of the women interviewed are single, widowed or divorced working-class, hence are “necessity entrepreneurs” complementing their salaries to run their homes and families. Lack of financial capital and the difficulty of accessing this from financial institutions, were viewed by the majority of the respondents as obstacles, and not fear of taking risks, as traditionally believed. Most of the Black women in craft business surveyed do not have a business space and could not afford to rent a curio shop, hence they use pavements in cities to sell their products, outside the mainstream marketplace. Many of them are being harassed by metro policemen who would arrest them and confiscate their stock, for using officially unallocated business spaces for their businesses. These women entrepreneurs belong to the informal sector, where growth opportunities are not high.

Lack of business capability

Many women in tourism businesses, especially those that are successful do not run or own their businesses alone, but work with their male counterparts as partners, or are employed as managers. This reveals the significant contribution the male entrepreneurs may have in the day-to-day running of the business, pointing to the deduction that women tourism entrepreneurs do not have the necessary capacity or skills to run tourism business. Societal environment and historical background may limit women from taking up challenging tasks, as in Africa, boys are more encouraged to take up challenging tasks than girls. According to Ezeuduji (2015), and Ezeuduji & Rid (2011), unique value proposition, product excellence, marketing capability, operational excellence and customer service are necessary skills required by tourism businesses to be successful. They also suggested stakeholder network and collaboration as key strategies to compete successfully, especially in rural Africa. Some of the women interviewed or surveyed do not have appropriate linkage to the tourism industry, to show their presence, and therefore find it difficult to market their businesses and attract tourists. This poor marketing skill was also observed by one of the researchers, especially amongst craft sellers. They are just scattered everywhere, without signage of their presence. Some of them belong to "self-employed women union", but this union is not effective in being the "voice" for women in business. It was also reported that lots of exploitations (negative power-play) took place between women crafters and curio shop owners (mostly women too), where many of the owners of curio shops in urban areas bought craftwork from rural women at a very low price (as the rural women are often desperate to earn some money to feed their families, due to poverty), only for the curio shop owners to resell them at exorbitant rates in the cities. This provides evidence that women are also being exploited by their fellow women. The opportunity of business network discussed below is therefore critical for success.

Problem of size and scope

Most of the tourism businesses run by the women are categorised as small and micro enterprises and therefore have a problem of competing with medium-sized and large businesses, with many of them being big conglomerates (safaris and holiday inns) that own a chain of tourism facilities in more than one country in Southern Africa. The big hotels get most of the tourists as the tour operators sell all-inclusive travel packages to them. Entrepreneurs in the townships are forced to rely on spill-over domestic tourists who attend events and ceremonies as well as rituals in cities (such as Durban, Johannesburg and Cape Town), who decide to travel more inland. This study argues however that all businesses start small, and if entrepreneurs have the necessary business skills discussed later in this paper, they will be successful and grow if they wish.

Racial issues and traditional perceptions

Some (but not all) of the Black women interviewed posit that White tourists never patronise them. The White tourists patronise White business owners. One of the underlying reasons behind this behaviour may be found in the perception that White business owners are more reliable than Black business owners, especially among European tourists. Another reason may be found in humans who try to avoid culture shocks, whenever and wherever it is possible.

In Africa, according to the respondents, certain types of business are perceived to be unfitting for a woman. Examples of such businesses in tourism are transport, tour operation and wildlife safari. Women therefore are employed in these businesses to play supporting roles, such as in reservations, reception and bookkeeping. Botha, Fairer-Wessels, and Lubbe (2006) stated that in extreme cases, society does not patronise businesses that are run by women, due to cultural, attitudinal, and societal barriers. Brown (1997) posited that in developing countries, limited education and training in vocational studies are barriers to running businesses competitively. Collateral to access loans for business growth and poor credit history are also hindrances. Hence, Brown (1997) argued that though males may not be equally affected by these financial barriers, the situation is worse for women. Some solace however lies in the recent study conducted by Iwu et al (2016), among a South African university students, which found that there is no relationship between gender or culture and the entrepreneurial intention. For women entrepreneurs, the way forward is provided in the later part of this paper.

Business location

Unfavourable business location may also play a role in attracting tourists to accommodations, as some Black tourism business owners agreed that some White tourists do patronise them, but do not stay more than two nights. Many tourists do not like visiting the townships, due to perceptions of safety and security. It is however deduced by this study that if women entrepreneurs operating in townships have the necessary business skills, the tourists will visit and patronise them, as safety and security issues in South Africa are not only situated in townships. Ezeuduji (2013) suggests that strong police presence and proper policing in South Africa will help curb crime, improve safety, and reduce these perceptions.

4.3. Opportunities for Women in Tourism Businesses

Some opportunities however are available to tourism business women in KwaZulu-Natal, and are identified in this research to include local municipality support, internet marketing, and formation of business network for self-support and training. These are discussed hereafter.

Local municipality support for women entrepreneurs

Some municipalities such as eThekwini, provide business cards to tourism entrepreneurs to help them network with customers and business associates, however this is not sufficient to draw tourists to the townships or rural areas. Accommodation facilities rely on municipalities' tourism departments for promotion strategies. It is however envisaged that women entrepreneurs can form pressure groups to demand more organised support from the local municipalities who are charged with local economic development. A clear and concrete picture of what they want can form basis for discussion and subsequent support from the local municipality tourism office. Areas for support identified by this research include easier access to financial assistance, training for capacity development, and marketing.

Internet marketing

Web presence has become a new form of business marketing (market communication), and few Black women tourism entrepreneurs have access to it, as creating and managing a website involves lot of money from them. Consequently they rely on the traditional word-of-mouth marketing strategy or being visible on the major transport routes or convergence points, as in the case of craft dealers. The local municipality tourism office' support discussed before can lead to a common website being created for the women entrepreneurs in a local municipality, listing their names or business names, physical location and product/service offering. This website can be linked to the official website of Tourism KwaZulu-Natal. The study by Lassithiotaki and Roubakou (2014), in Greece, showed that most women's agricultural cooperatives did operate as small "closed" family businesses. Only few of these cooperatives had permanent staff, and account books were kept by external accountants. They did not employ professional staff for business organisation, management or marketing purposes. They used brochures, local media and participation in local and national exhibitions as means of advertising. Although their cooperatives are advertised in official websites, just a few of them used electronic marketing or commerce. Women entrepreneurs in South Africa in their networks can learn and improve on the Greece situation, augmenting traditional marketing and electronic marketing.

Formation of business network for self-support and training

Some of the women interviewed posit that it is high time Black tourism entrepreneurs formed a business network (association) to help them focus on marketing their businesses together. This network need not be a big union in a municipal area, but manageable clusters of business women in a small geographical area or marketplace, who are keen on collective marketing and bargaining. Women entrepreneurs' marketing efforts need complement the marketing actions of the local municipalities. Training opportunities can also be put forward by the women entrepreneurs to the local municipalities and not-for-profit organisations (when these women speak with one voice) in areas identified by this research, such as in accessing financial capital, creating unique value proposition, striving towards product and operational excellence, customer service, and marketing capability. This will also help women entrepreneurs adopt the modern business methods and entrepreneurial attitude suggested by Lassithiotaki and Roubakou (2014).

The findings of this study, supports largely that of Rogerson and Visser (2004) who identified factors that constrain the expansion and transformation of the South African tourism industry to include tourism education, human resource skilling, and usage of new Information and Communication Technologies (ICT). It also supported the study of Brown (1997) who stated that in developing countries, limited education and training in vocational studies, collateral to access loans for business growth, are barriers to running businesses competitively. However, this study has new findings, as discussed earlier.

5. Conclusions

This study concludes that majority of women tourism entrepreneurs in KwaZulu-Natal, South Africa, are facing some business challenges. These include lack of financial capital, low business capability, problem of size and scope, racial issues and traditional perceptions, and business location. Some opportunities for growth however are available to tourism business women entrepreneurs in KwaZulu-Natal, and are identified in this research to include local municipality support, internet marketing, and formation of business network for self-support and training. Business training is required to help women entrepreneurs in tourism business on the importance of, and knowing how to source for business funding, create unique value proposition, and in areas of product excellence, marketing capability, operational excellence and customer service. These are necessary skills required by tourism businesses to be successful. Women entrepreneurs' network formation and collaboration are key strategies to compete successfully, especially in rural Africa. This study therefore recommend trainings financed by local municipalities and provided by not-for-profit organisations, as ways of improving the business skills of women tourism entrepreneurs. Focussed workshops and seminars geared at addressing women entrepreneurs' needs and challenges can help sustain their businesses and in turn contribute to local economic growth, by ways of paying levies, taxes and providing job opportunities for local people. Women tourism entrepreneurs should consider using brochures, local media and participation in local and national exhibitions as means of advertising and publicity. Strong website presence (local municipality and network clusters) can also help them in electronic commerce. As the continent of Africa is fast developing and the trend remains that many Africans are travelling and acquiring western education at home and abroad, the negative traditional perceptions towards women, especially women in business are disappearing, and will hopefully become a thing of the past in the next decade.

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Satisfaction with Life Amongst the Urban Poor: Empirical Results from South Africa

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Abstract: Satisfaction with life is a dynamic factor which merits ongoing research takes into consideration all contextual influences. This study assessed the influence of four economic factors, namely employment status, rural/urban residence, public service delivery and poverty on satisfaction with life amongst the urban poor in South Africa. Although satisfaction with life is a well-research concept in most environments, no consensus exists on the results, which prompts the need for continuous research. A survey design was adopted involving 402 purposively selected residents of Sebokeng Township in Gauteng Province. Regression analysis revealed that employment status, public service delivery and poverty significantly predicted satisfaction with life. Residing in the rural areas was statistically insignificant. The study provides current insights on the association between economic factors and satisfaction with life amongst poor people in urban societies**.** The study may be used by governments in developing countries to develop policies for improving the socio-economic well-being of poor societies**.**

Keywords: Satisfaction with life; employment status; rural/urban residence; public services delivery; poverty

JEL Classification: I00

1. Introduction

Satisfaction with life refers to a situation obtained through the comparison of what a person wants and possesses (Özer & Sackes, 2011). An individual is likely to become satisfied with his/her life upon realisation of the perceived wants and possessions in life. This includes achievements such as *inter alia*, being happy in daily life, feeling physically better-off, economic security and having well-fulfilling social relationships (Demirel, 2014). In South Africa, evidence of research focusing on satisfaction with life in varied settings is available (e.g.

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Bookwalter *et al.,* 2011; Botha & Booysen, 2012; Ebrahim *et al.,* 2013; Schatz *et al.,* 2012). However, there is no unanimity in the available research results, particularly on the influence of economic factors on satisfaction with life. This dovetails into long-standing controversies directed to the interplay between each socio-economic factors and satisfaction with life.

As mentioned by Morrison (2011), it is considered unscientific to generalise the influence of each factor on satisfaction with life, since there are contextual factors that should be considered. As such, whilst the subject may be inundated with domineering theoretical formulations and empirical results, none of them has universal applicability. This creates an impetus for continued research on satisfaction with life and its influencing factors.

In the field of development economics, it is widely acknowledged that satisfaction with life is an important indicator of socio-economic well-being (Calvo & Mair, 2014). In view of this, it is important for those in positions of socio-economic governance to have a more informed understanding of the dimensions of satisfaction with life amongst the different cohorts of society falling under their jurisdiction, as this facilitates improved decision-making. Decision making that is based on assumptions may not be effective in addressing societal and economic problems (Rashid & Azizah, 2011). This being the case, a concurrent need exists for research studies that provide social and economic development planners in government with prototypical insights on the existing levels of satisfaction with life as well as its variants within South African societies, especially the poor and marginalised ones. Such information provides the ammunition that is requisite in formulating policies and other initiatives requisite in meeting the socio-economic needs of communities. Implementation of such policies may lead to higher satisfaction with life and a better reputation for the country at large.

The aim of this study is to investigate the influence of economic factors amongst the urban poor in South Africa. To achieve this aim, the following four objectives were formulated;

- To determine the perceived influence of employment status on satisfaction with life amongst the urban poor in South Africa;
- To establish the perceived influence of rural or urban residence on satisfaction with life amongst the urban poor in South Africa;
- To established the perceived influence of public service delivery on satisfaction with life amongst the urban poor in South Africa;
- To determine the perceived influence of poverty on satisfaction with life amongst the urban poor in South Africa.

2. Theory

2.1. Employment Status and Life Satisfaction

At any given time and to any given individual, the effects of unemployment are severe (Steiber, 2013). Research (e.g. Calvo & Mair, 2014; Knabe & Ratzel, 2011; Opocher & Steedman, 2009) establishes that joblessness at any conventional level is typically found to be statistically significant and negatively correlated with satisfaction with life. As stated by Wooden and Drago (2009) being unemployed weakens satisfaction with life more than any other single characteristic (including important negative ones such as divorce and separation) (Binder & Coad, 2012). Joblessness leads to loss of income, decreased self-esteem, a reduced feeling that life is under control, loss of friends/social connections and loss of personal status and identity (Clark *et al.*, 2010). Pfann (2006) mentions that being employed is one of the requisites for satisfaction with life in most societies. In agreement, Powdthavee (2012) specifies that there exists a strong theoretical case that work and paid employment are generally beneficial for physical and mental well-being, as well as for satisfaction with life. Cheng and Chan (2008) further argue that employment is arguably the most important mechanism of obtaining adequate economic resources that are essential for material prosperity and full participation in the modern society. Work tends to be fundamental to individual identity, social roles and social status, and facilitates the meeting of important psychological needs in societies where employment is the standard (Clark *et al.*, 2009). This reasoning signifies that employment is the key to increasing material well-being as well as satisfying psychological needs.

2.2. Rural/Urban Residence and Satisfaction with Life

While it is appreciated that urbanites enjoy certain privileges such as having a wider array of choices available to them in terms of the number of schools, medical facilities, transport and shopping complexes among others, living in rural areas has its own advantages that tend to boost the satisfaction with life of rural people (Haug, 2008). For instance, residents of rural areas enjoy the unpolluted natural world daily, and do not have to experience the daily stresses of urban life such as high traffic volumes, higher crime rates and payment of higher taxes (Wood *et al.*, 2010). Rashid and Azizah (2011) mentions that people living in rural areas are less likely to experience mental health challenges such as stress and depression than urban dwellers. Zagozdzon *et al.* (2011) advocates that although urban populations have higher numbers of social networks as well as networking opportunities, rural communities tend to offer residents the opportunity to establish long lasting and more personal relationships since they encounter the same people more frequently.

In addition to the abovementioned, whilst there are fewer schools in rural areas, children can establish better relationships with their classmates and experience the benefits of smaller classrooms (Carta *et al.* 2012). In the USA, Glaeser *et al.* (2014) reports that people in declining cities experience low satisfaction with life than those in rural areas. In South America, Graham and Felton (2006) also found that rural people experienced better well-being than urbanites. In a study by Naude *et al.* (2008) found that residents from coastal cities, and Cape Town in particular, enjoyed the highest level of satisfaction with life amongst all South Africans. The study took non-monetary but objective measures of satisfaction with life into consideration, such as literacy levels, life expectancy and environment.

2.3. Public Service Delivery and Satisfaction with Life

Satisfaction with the delivery of public services is essential in boosting the satisfaction with life of people in a given country. For instance, as mentioned before, the backlog in the delivery of public services in South Africa has led to widespread protests by disgruntled citizens (Habib, 2010; Nleya, 2011; Swart, 2013). Both previous and recent research in this country (Akinboade *et al.*, 2012; Managa, 2012; Møller, 1996; Møller, 1999; Møller & Jackson, 1997) found that inadequate provision of public services has a substantial impact on satisfaction with life. In fact, where public service delivery was satisfactory, respondents in surveys by a number of scholars (Møller, 1996; Møller & Devey, 2003) demonstrated higher satisfaction with life levels. On the international front Giordano *et al.* (2011) stress that satisfactory public services can help to mitigate the effects of economic challenges, for example, by helping people back into the labour market and putting in place preventive health measures. Public policy interventions can also support better access for disadvantaged groups to services, and can directly intervene in such areas as job counselling or debt advisory services where unemployment and financial hardship are impacting negatively on citizens (Giordano *et al.*, 2011). Luechinger *et al.*, (2008) maintain that having access to good housing, education, health and other public services has an important impact on the personal well-being and satisfaction with life of citizens. Tang (2012) further urges governments to focus on improving the quality of and the access to public services since it is one of the essential tools that policymakers can use to provide better living conditions and to create opportunities for active participation in society. It appears then that satisfaction with public services has a positive bearing on satisfaction with life.

2.4. Poverty and Satisfaction With Life

Poverty, regardless of its type, is detrimental to satisfaction with life and this may be attributed to the serious nature of its effects (Neff, 2009). High mortality rates and both mental as well as physical health problems are prevalent among the economically deprived (Deaton, 2008). Neilson *et al.* (2008) maintain that besides financial uncertainty, economically deprived families are susceptible to a series of adverse events that include illness, depression, eviction, job loss, criminal victimisation, prostitution and early family death, among others. Poverty is also associated with violence in families, including child and elder abuse (Van Praag, 2011). Parents who experience hard economic times may become excessively punitive and erratic, issuing demands backed by insults, threats, and corporal punishment (Yu, 2013). Getting out of poverty is difficult for anyone since poverty can become a self-perpetuating cycle. For instance, poor children are at an extreme disadvantage in the job market and in turn, the lack of good jobs ensures continued poverty such that this cycle may end up repeating itself until the pattern is broken (Knabe & Rätzel, 2011).

In the South African context, numerous studies (Bhorat & Van der Westhuizen, 2012; Hoogeveen & Özler, 2006, Pauw & Mncube, 2007, Posel & Casale, 2011; Van der Berg *et al.*, 2007; Van der Berg & Du Toit, 2007; Van der Berg & Yu 2008; Yu, 2009; Yu, 2013) found that income poverty has detrimental effects on both happiness and satisfaction with life. Other studies (for example Adato *et al.*, 2004; Davids, 2006; Hamel *et al.*, 2005) demonstrate that poverty in South Africa is divided along racial lines and that black Africans are more frequently going without basic services and necessities than whites, coloureds and Indians, leading to depressed well-being within their ranks. However, some researchers (Di Tella & MacCulloch, 2010; Van Praag, 2011) argue that satisfaction with life may be relative, particularly once basic needs are satisfied, and therefore conditioned by "reference groups" that are perceived as important. This has the effect of altering perceptions in different ways, depending on whether the reference groups of the poor tend to be their peers, richer people or people defined by characteristics other than their income (Diener *et al.*, 2011). It appears then that people adapt to varying extents to shifts in their income, which implies that transitions in and out of poverty contribute to satisfaction with life.

3. Empirical Survey

A survey questionnaire was administered to 402 residents from different households in Sebokeng high density residential area, which is located in Gauteng Province, South Africa. A non-probability purposive sampling technique was used to select respondents since there was no single sample frame from which a reliable list of the residents of Sebokeng could be obtained. Since the study concentrated on the urban poor, only individuals above adult 18 years of age who earned less than ZAR2000 per month were included in the sample. The survey was conducted in March 2015. The research instrument consisted of Satisfaction with Life Scale (*Diener et al,* 1985) to measure satisfaction with life in addition to questions designed to elicit categorical data on the four economic factors considered in this study. Data collection was conducted during weekends when most residents of Sebokeng were available.

4. Regression Analysis

The survey data were analysed using the Statistical Package for the Social Sciences (SPSS version 23.0) software. Regression analysis using the enter method was utilised in assessing the interplay between satisfaction with life and the four economic factors. Satisfaction with life was entered into the regression model as the dependant variable whereas employment status, rural/urban residence, public services delivery and poverty status were entered as independent variables. In entering the data into the regression model, it was acknowledged that the collected data were categorical, which created the need to compute dummy variables for all four independent variables used in this study. Only two categories were recognised for employment status, public service delivery, rural/urban residence and poverty status. Accordingly, these variables were ere entered into the regression models dichotomously and coded as either 0 or 1. Satisfaction with life was represented by a newly created variable, (Satisfaction with Life1). The results of the regression analysis are reported in Table 1.

Table 1. Regression Analysis: Socio-Economic Factors and Life Satisfaction

Independent variables: Socio-economic factors	Dependent variable: Satisfaction with Life		
	Beta (β)	**T (t)**	**Sig *(P)***
Employment Status	0.528	3.111	0.002
Rural Urban Residence	-0.035	-0.694	0.488
Public Service Delivery	0.132	2.800	0.005
Poverty Status	0.151	2.592	0.010
*R= 0.279 Adjusted R^2 = 0.218 * Significant at the .05 level*			

Table 1 summarises the regression analysis results obtained in the study. In terms of employment status, the results of the regression analysis showed that employed people had higher satisfaction with life (β = 0.528; *P*=0.002) when compared to those that were unemployed. As regards rural/urban residence, the rural/urban residence factor was not statistically significant (*P*=0.488) and scored a negative beta (β = -0.035), signifying that individuals who perceived that rural life was better had less satisfaction with life with life than those who thought otherwise. Concerning the influence of public service delivery on satisfaction with life, people experiencing satisfactory service delivery experience higher satisfaction with life (β = 0.132; *P*=0.005) when compared to those exposed to unsatisfactory service delivery. On the issue of poverty status, people who were economically advantaged enjoyed better satisfaction with life (β = 0.151; *P*= 0.010) than those who were facing economic deprivation.

5. Discussion

Some of the results obtained in the study were consistent with conventionally accepted trends on the influence of economic factors on satisfaction with life. For instance, with regard to employment status, the results of the study validate the conclusion of previous studies (Anderson *et al.* 2012; Jenkins *et al.*, 2011; Lelkes, 2010) that being employed leads to increased satisfaction with life. With reference to the delivery of public services, this study affirmed that improvements in the delivery of public services has a stimulus effect on satisfaction with life. These results are synchronous to those found in a number of previous studies (Amin *et al.*, 2008; Harper, 2011; Luechinger *et al.*, 2008; Tang, 2012) which affirmed the positive influence of public service delivery on satisfaction with life. Regarding poverty, the results of the current study endorse research work (Clark *et al.*, 2009; Diener *et al.*, 2011; Knies, 2011; Martin and Hill, 2011) that acknowledges that exposure to adverse economic circumstances significantly reduces satisfaction with life. These results provide a leverage of substantiation of previous studies that produced similar results. Thus, people surveyed in this research places are generally not different from the rest of the world in terms of their beliefs and attitudes towards satisfaction with life.

5.1. Employment Status and Satisfaction with Life

A noteworthy result drawn from the study is that employment status emerged as the strongest predictor of satisfaction with life (β = 0.528; *P*=0.002). The dominance of the employment issue could perhaps be attributed to the dynamics associated with the issue of unemployment in South Africa. The new ANC government that took over after the emergence of democracy in 1994 promised to facilitate the creation of more jobs to black people (Meyer, 2014). However, more than two decades later, existing evidence suggests that this goal is increasingly becoming unsustainable, as presented by existent evidence. For example, as shown in a report by Statistics South Africa (2014) in 1994, while the official unemployment rate in South Africa was 22%, the figure had since increased steadily to 25% by December 2014, making South Africa the country with the ninth highest unemployment rate the world. The report further outlines that while the number of employed people has increased by up to 6, 1 million since 1994, the number of unemployed people has also increased exponentially by a total of 3, 4 million. This depicts that the percentage growth in the number of unemployed people, which stands at 73, 3%, has been greater than the growth in the number of employed people, which stands at 69, 2%. Another report by the International Labour Organisation (2014) projected that South Africa is likely to experience the eighth highest unemployment rate in the world in the year 2015. These developments show that whilst the "more jobs to the people" mantra from politicians continues, the actual facts on the ground bear testimony to a different reality.

The unemployment situation in South Africa is exacerbated by the fact that unemployment is higher among the black majority, than among any other race in the country (Statistics South Africa, 2012). Given that most of the unemployed are black people who reside in townships, it could be mentioned that they have not been spared by the avalanche of adverse effects that originate from being unemployed. Examples of such specific negative experiences by unemployed people include feeling that life is empty, financial difficulties, boredom, uncertainty about the future, loneliness, family conflicts, having nothing productive to do, decreased self-worth and self- esteem and social isolation, among others (de Witte *et al.,* 2012). Additionally, unemployment in South Africa is accompanied by extreme destitution, which is aggravated by the inability of the South African government to support such people with social grants and other forms of unemployment benefits (Contogiannis, 2007). Coupled with the high unemployment rate, which makes it difficult for people to find jobs, those that find themselves in this predicament are usually left to the clemency of fate (Ribton-Turner & De Bruin, 2006). It appears natural then for people in townships the like of Sebokeng, Sharpville and Sicelo, to place employment status on a higher pedestal than other socio-economic predictors of satisfaction with life. It is an indication of their attitudes towards the severity of the negative circumstances surrounding unemployment, which they are exposed to daily in South Africa.

5.2. Rural/Urban Residence and Satisfaction with Life

An additional interesting result in the study was that rural residence had a negative effect on satisfaction with life. This result is rather unusual in the sense that previous research, (e.g. Combs, 2006; Graham & Felton, 2006; Haug, 2008; Wood *et al.,* 2010) established that living in rural areas leads to greater satisfaction with life. These unconventional results imply that people living in rural South Africa face challenges that tend to limit their satisfaction with life. Traditionally, a rural home was considered an important part of life in the African family, so important that most black people would have a city home and a rural home (Walker *et al.,* 2010). To some extent the recent debacle in which president Zuma is alleged to have siphoned a lot of government funds and channelled them towards the upgrading of his rural Nkandla home (Madonsela, 2014). This act serves as a specimen of the importance of the rural home to the African man.

Previously African people held rurality in high regard, to the extent that important festive seasons such as Christmas were spent in the rural areas (Gopaul, 2006). People in rural areas were regarded as special family consultants who could be called upon for guidance and direction during times of need (Gardiner, 2008). However, with the dawn of the modern age, some of these practices have progressively lost their appeal amongst black people. As more black people adopted the Western culture and its values, they inadvertently unbundled themselves from certain traditionally held values as regards the importance of the rural home and its significance to their modern African culture (Twala, 2012). Urbanisation is considered to be more fashionable by most black people and has even triggered massive rural to urban migration in South Africa. In the 2011 census (Statistics South Africa, 2012) lifetime migration patterns revealed that most provinces that were affected by outmigration between 2001 and 2011 recorded many moving from rural areas to urban areas. Another report by Peberdy (2012) shows that two thirds of South Africans now live in urban areas. These developments show that urban life and its glitters appears to be more appealing to black people, resulting in the loss of much of the respect and importance they previously attached to rurality and its tenets. Therefore, the dominant attitude among black South Africans is that the urban space offers better satisfaction with life than the rural area.

It is possible that the situation mentioned above is aggravated by the slow pace of rural development in South Africa, making rural life less appealing for many people. Whilst it appears that the South African government has attempted to improve both the available amenities as well as social welfare in rural South Africa, there are still many challenges remaining (Wisborg *et al.*, 2013). A recent study by Jacobs and Hart (2014) highlights that rural-based South Africans are presently beleaguered by a constellation of challenges related to basic survival. These include the lack of food security, unmet housing needs, ineffective service delivery, infrastructural decay, youth unemployment, among other socio-economic depravities. As a typical case, in 2013, an opposition party known as the Economic Freedom Fighters identified an impoverished family living as neighbours to President Zuma’s highly opulent Nkandla home and opted to build a better shelter for that family (Mthethwa & Savides, 2014). Theirs was a case of giving publicity of the real picture of rural underdevelopment and misery in South Africa. Still, other important socio-economic indicators, such as infant mortality rates, death rates, literacy rates and *per capita* income, among others, show a great disfavour to rural South Africa when compared to urbanised South Africa (Parliamentary Monitoring Group, 2012). It is not surprising then, that those who dwell in certain urban places, such as Sicelo, who are aware of the adversities associated with residing in the rural areas, will uphold that it is better to reside in urban areas instead. They cannot fathom how those living in rural South Africa are managing to cope with life, in the wake of such manifest hardships. Hence the dominant perception that satisfaction with life is less in rural areas than in urban areas.

6. Conclusions and Recommendations

The aim of this study was to examine satisfaction with life in South Africa by analysing the association between four economic factors, namely employment status, rural/urban residence, public service delivery and poverty on satisfaction with life amongst the urban poor. The study reveals that employment status, public services delivery and poverty significantly predict satisfaction with life amongst the urban poor. Employment status emerged as the most important predictor of satisfaction with life than the other factors. It also emerged that the urban poor perceive that life is better in urban areas than in rural areas. Overall, the study compares favourably with similar studies conducted previously.

In order to create more employment opportunities it is necessary for government to focus on initiatives that continuously grow the South African economy. One such initiative is to stimulate more foreign direct investment (FDI), a practice in which foreign investors are encouraged to invest in another country (Sandrey, 2013), in this case South Africa. FDI can be enhanced through practices such as enacting tax concessions in such areas as corporate tax as well as individual income tax, financial subsidies for investment, preferential tariffs, government support for research and development projects assistance with relocation and expatriation, among others (Van der Lugt *et al.,* 2011). With such foreign investments additional employment opportunities will be created, thereby decreasing the unemployment rate.

Further employment opportunities can be created by protecting the South African industry by minimizing the importation of cheap imports, especially from China, which are harming the local industry by creating unfair competition (Woltmann, 2013). Furthermore, instead of delegating the creation of jobs to the private sector, the South African government should create more employment opportunities by increasing government spending in national projects such as infrastructural construction and rehabilitation (e.g., bridges, roads, government buildings). Many people, both skilled and unskilled, can be employed in such projects.

The key to altering the prevailing impression that living in South African rural areas leads to dissatisfaction with life lies in improving the standard of living in rural South Africa. People living in rural areas should enjoy similar comforts and privileges as those living in urban areas. Rural areas in South Africa still merit better schools, modern road networks, improved sanitary facilities, improved health centres, modern shopping centres, better access to clean tap water and access to electricity, as well as other public utilities. Private sector investment in rural areas should be encouraged such that companies can build manufacturing plants, depots, warehouses and other facilities, which can help to create jobs and bring improved services to rural areas through urbanisation. With such developments in place it is possible that those in South African rural areas will become more satisfied with life than those in urban areas, which is the typical pattern elsewhere.

Since the improvement of the delivery of public services is associated with higher satisfaction with life, it follows that satisfaction with life in South African townships can be improved, among other things, by improving the quality of public services rendered there. Stricter policing of public officials is imperative to reduce cases of corruption in the awarding of tenders. In cases where some are convicted of such crimes, stiffer penalties have to be enforced, which can send warning signals to those intending to participate in corrupt activities. Since much of the delivery of public services is conducted at the local government level, it is crucial to focus specifically on challenges facing municipalities which are affecting their smooth operations.

It is also recommended that the public procurement system, as characterised by the Preferential Procurement Policy Framework (Broad Based Black Economic Empowerment) be streamlined to make it more effective towards the provision of services to the public. In order to ensure that civil servants are committed to the eight Batho Pele principles which are consultation, service standards, redress, access, courtesy, information, transparency and value for money (KwaZulu Natal Department of Public Works, 2014), continuous training and development of civil servants who work in government is required. Additionally, various motivational strategies need to be implemented in order to intensify the morale of these civil servants in their role of dispatching services to the public. In this manner public servants will be able to be consistently dedicated to rendering an effective and efficient service to the public.

The South African government could seek increased financial support from Bretton-Woods institutions such as the International Monetary Fund (IMF) and the World Bank. Together with budgetary allocations from the fiscus, the funds obtained from these funding institutions could be channelled towards poverty alleviation programs that include, amongst others, addressing gender inequality, dealing with communicable diseases that include HIV/AIDS, tuberculosis, pneumonia and others that are prevalent amongst poor communities, improving the social welfare system and rural reform mechanisms. Another important initiative could be to encourage good governance in state institutions in South Africa. This could be attained by monitoring the activities of government officials in order to ensure that corruption is addressed. The efforts of non-governmental organisations

(NGOs) could also be harnessed such that they complement government efforts towards poverty reduction in South Africa.

The fiscal policy needs further amendments in order to make it more pro-poor. Income tax brackets should be widened further to ensure that low income earners are subjected to less income tax. The current situation in which people earning between R0 and R181 900 per annum are subjected to a blanket income tax of 18% for each R1 (South African Revenue Service, 2015) is undesirable since it imposes a heavy income tax burden on even the lowest of income earners. A further assessment of poverty status in South Africa is necessary, in order to clearly distinguish between those that are poor and those that are not poor. For instance, the poverty datum line in the country is not very clear, since South Africa does not have a single poverty line but uses three poverty metrics namely the food poverty line, as well as upper- and lower-bound lines to assess the total cost of living in the country (Statistics South Africa, 2008). It is therefore not very easy to determine who is poor and who is not poor amongst South Africans although the reality is that poverty exists at a significant level in the country.

Certain commodities that are used by low income earners should be added to the basket of products that are exempt from value added tax. These include, among others, commodities such as sanitary ware for women, used clothing, education instruments such as pencils and writing pens and common medicines.

The Reconstruction and Development Program (RDP) Housing Scheme should be maintained in order to provide free housing to poor South Africans, but efforts should be made to address current glitches facing the program. For example, multiple ownership of RDP houses should not only be discouraged, but outlawed so that perpetrators of such practices are brought to book. The possibilities of free education, free health care and free transportation or other public services could be explored. However, caution is necessary in order to limit the possibilities of engendering of the entitlement mentality amongst South Africans.

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A Bayesian Approach for the Analysis of Macroeconomic Dynamic in Case of Emerging Countries-Monetary and Fiscal Policy Model

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Abstract: The paper proposes the analysis of the main drivers of the economic growth in Central and Eastern Europe, in three emerging countries: Czech Republic, Hungary and Poland, with a development stage similar with that of Romania. Given the vulnerabilities of the Central and Eastern Europe region at the beginning and during the recent global economic and financial crisis, there is an increased interest to identify the models that can describe the principalcharacteristics of the Central and Eastern Europe macroeconomic variables: gross domestic product, investment, wages and salaries, inflation, hours worked, consumption and themonetary variable- interest rate. Moreover, another scope is to analyze the frictions that describe the evolution of the seven data series, as the stochastic dynamic of the macroeconomic model is driven by orthogonal structural shocks.

Keywords:monetary; policy; frictions; shocks

JEL Classification: C01; D50; B22; C4.

1. Introduction

I have proposed to analyze in the current thesis the degree in which the model responses to the requests of the Central and Eastern Europe economies, based on a study completed for the following countries: Poland, Hungary and Czech Republic. In this purpose I have used a Bayesian approach for the estimation of this forward-looking model, in a general equilibrium framework.

The current model is not a simple monetary policy model, involving also the fiscal policy, so it can be analyzed taking into account the policy shocks involved: price and interest rate shocks (as monetary policy shocks) and also the exogenous spending shock (which includes together with net exports also the government spending, instrument of the fiscal policy).

So, the model which is an improvement and a simplified version of the one proposed by the authors Frank Smets and RafWouters in 2003 in the article "An Estimated Stochastic Dynamic General Equilibrium Model for the Euro Area has

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the purpose to analyze the main drivers of the economic growth, putting an eye on the frictions of these four economies (seven frictions- reduced to the number of the seven observed variables).

As a result, the research proposes an overview of the dynamic of monetary policy that should be conducted in the face of multiple sources of uncertainty, including model and parameter uncertainty as well as uncertainty about future shocks.

2. The Non-Linear Model

2.1. Producers

The product with destination of final consumption, Y_t, is composed of good for intermediate consumption, $Y_t(i)$ that are bought by final good producers, grouped into Y_t and sold in a perfectly competitive market.

They maximize the profit obtained, as per maximization function:

Max $P_t Y_t - \int_0^1 P_t(i) Y_t(i) di$, s.t. $[\int_0^1 G(\frac{Y_t(i)}{Y_t}; \lambda_{p,t}) di] = 1$ $(\mu_{f,t})$,

$Y_t, Y_{t(i)}$

$P_t, P_t(i)$ are the prices of goods for final consumption and for intermediate consumption and G is a function having the characteristic of being strictly concave on one hand and being an increasing function on the other hand, with the property: G(1)=1.

ε_t^p istheprice mark-up shock, $\varepsilon_t^p \in (0;\infty)$ and follows and exogenous ARMA processln $\varepsilon_t^p = (1-\rho_p)\ln\varepsilon^p + \rho_p \ln\varepsilon_{t-1}^p - \theta_p \eta_{t-1}^p + \eta_t^p, \eta_t^p \approx N(0,\sigma_P)$.

2.2. Intermediate Goods Producers

The producers of goods with the destination of intermediate consumption follow the technology equation:

Y $_t$ (i)= $\varepsilon_t^a K_t^s(i)^\alpha \gamma^t L_t(i)]^{1-\alpha}$ - $\gamma^t \Phi$, $K_t^s(i)$ represents capital in services form, $L_t(i)$ represents the input of labor, while Φ is a fixed cost.

γ^t represents the labor growth rate and ε_t^a represents the shock of the productivity factor and is defined as:

$\ln \varepsilon_t^a = (1-\rho_z)\ln \varepsilon^a + \rho_a \ln \varepsilon_{t-1}^a + \eta_t^a, \eta_t^a \approx N(0,\sigma_a)$.

The profit of any firm from the economy follows the following equation: $P_t(i)Y_t(i)$- $W_t L_t(i) - R_t^k K_t^s(i)$, W_t represents nominal wage or salary rate and R_t^k represents the capital rental rate.

The model assumes that firms are able to adjust prices used with probability 1-ξ_p in each period.

The resulting price that is optimal is obtained from the following maximization function:

$$\text{Max } E_t \sum_{s=0}^{\infty} \xi_p^s \frac{\beta^s \Xi_{t+s} P_t}{\Xi_t P_{t+s}} [\ P_t^{\approx}(i)\ (\prod_{l=1}^{s} \pi_{t+l-1}^{l_p} \pi_*^{1-l_p}) - MC_{t+s}] Y_{t+s}(i)$$

$$P_t^{\approx}(i)$$

$$\text{s.t.}\ Y_{t+s}(i) = Y_{t+s} G'^{-1}(\frac{P_t(i) X_{t,s}}{P_{t+s}} \tau_{t+s}).$$

ξ_p^s represents firms probability of price adjustment, π_t is inflation defined as π_t = $P_t / P_{t-1},$ $\frac{\beta^s \Xi_{t+s} P_t}{\Xi_t P_{t+s}}$ is the discount factor for firms,

$\tau_t = \int_0^1 G'(\frac{Y_t(i)}{Y_t}) \frac{Y_t(i)}{Y_t} di$ and

Theindex of prices obtained has the following equation form:

$$P_t = (1-\zeta_p) P_t(i) G'^{-1}[\frac{P_t(i)\tau_t}{P_t}] + \zeta_p \pi_{t-1}^{l_p} \pi_*^{1-l_p} P_{t-1} G'^{-1}[\frac{\pi_{t-1}^{l_p} \pi_*^{1-l_p} P_{t-1} \tau_t}{P_t}].$$

2.3. Households

Households in order to maximize utility function are able to choose final consumption $C_t(j)$, the number of working hours $L_t(j)$, acquisition of bonds $B_t(j)$

, capital investment $I_t(j)$ and capital utilization $Z_t(j)$. The utility function is as follows: $E_t\sum_{s=0}^{\infty}\beta^s[\frac{1}{1-\sigma_c}(C_{t+s}(j)-\lambda C_{t+s-1})^{1-\sigma_c}]\exp(\frac{\sigma_c-1}{1+\sigma_l}L_{t+s}(j)^{1+\sigma_l})$, related to the following equation of the budget:

$$C_{t+s}(j)+I_{t+s}(j)+\frac{B_{t+s}(j)}{\varepsilon_t^b R_{t+s}P_{t+s}}-T_{t+s}$$
$$\leq\frac{B_{t+s-1}(j)}{P_{t+s}}+\frac{W_{t+s}^h(j)L_{t+s}(j)}{P_{t+s}}+\frac{R_{t+s}^k Z_{t+s}(j)K_{t+s-1}(j)}{P_{t+s}}-a(Z_{t+s}(j))K_{t+s-1}(j)+\frac{Div_{t+s}}{P_{t+s}}$$

Capital at moment "t" has the following form: $K_t(j)=(1-\delta)_{t-1}(j)+\varepsilon_t^i[1-S(\frac{I_t(j)}{I_{t-1}(j)})]I_t(j)$,

ε_t^b represents the stochastic premiumresulted frominvestment in bonds, ε_t^b follows the stochastic process: $\ln\varepsilon_t^b=\rho_b\ln\varepsilon_{t-1}^b+\eta_t^b,\eta_t^b\approx N(0,\sigma_b)$,

where, δ has the significance ofrate of depreciation, S(.) is a function for quantifying the cost adjusting, with S(γ)=0, S'(γ)=0, S''(.)>0. ε_t^i illustrates the shock of investment component and is described by the equation: $\ln\varepsilon_t^i$ = $\rho_i\ln\varepsilon_{t-1}^i+\eta_t^i,\eta_t^i\approx N(0,\sigma_i)$. T_{t+s} represents taxes, while Div_t represents the dividends for distribution.

2.4. Intermediate labor and labor packers

Households provide their labor forthe intermediate labor union, the labor provided having the following form: $L_t=[\int_0^1 L_t(l)^{\frac{1}{1+\lambda_{w,t}}}dl]^{1+\lambda_{w,t}}$. (16)

Labor packers are those who acquire labor from unions and distribute the labor to producers of intermediary goods. Their maximization profit function has the following form:

Max $W_tL_t-\int_0^1 W_t(i)L_t(i)di$, s.t.$[\int_0^1 H(\frac{L_t(i)}{L_t};\varepsilon_t^w)di]=1$ ($\mu_{l,t}$)

$L_t, L_t(i)$,where W_t and $W_t(i)$ represent the price of total and for intermediary labor services , while H is a function strictly concave , which follows H(1)=1 and is increasing.

ε_t^w is an exogenous shocks of wages mark-up, $\varepsilon_t^w \in (0,\infty)$ and has the form of an ARMA process: $\ln\varepsilon_t^w = (1-\rho_w)\ln\varepsilon^w + \rho_w \ln\varepsilon_{t-1}^w - \theta_w\eta_t^w, \eta_t^w \sim N(0,\sigma_w)$.

From the first order conditions of the labor packers, we obtain:

$$L_t(l) = \left(\frac{W_t(l)}{W_t}\right)^{-\frac{1+\lambda_{w,t}}{\lambda_{w,t}}} L_t \cdot$$

Combining this condition with the zero profit condition we obtain an expression for the wage cost for the intermediate goods producers:

$W_t = \left[\int_0^1 W_t(l)^{\frac{1}{\lambda_{w,t}}} dl\right]^{\lambda_{w,t}}$, where $\lambda_{w,t}$ is defined as an ARMA process:

$$\ln\lambda_{w,t} = (1-\rho_w)\ln\lambda_w + \rho_w \ln\lambda_{w,t-1} - \theta_w\varepsilon_{w,t-1} + \varepsilon_{t,w}, \varepsilon_{t,w} \sim N(0,\sigma_w).$$

The dividends that are received by households from labor unions are included in the constraint of budget for households:

$$C_{t+s}(j) + I_{t+s}(j) + \frac{B_{t+s}(j)}{b_t^2 R_{t+s} P_{t+s}} + A_{t+s}(j) - T_{t+s} \le \frac{B_{t+s-1}(j)}{P_{t+s}} + \frac{W_{t+s}^h(j)L_{t+s}(j)}{P_{t+s}} + \frac{Div_{t+s}}{P_{t+s}} + \frac{R_{t+s}^k u_{t+s}(j)\overline{K}_{t+s-1}(j)}{P_{t+s}} - a(\mu_{t+s}(j))\overline{K}_{t+s-1}(j)$$

In case of unions there are also nominal rigidities as proposed by Calvo (1983), more precisely wages being adjusted with the probability of 1-ζ_w.

In case of unions who readjust wages, the optimization rule consists of choosing a wage $\breve{W}_t(l)$ in order to maximize subsequent wage income in case when unions keep this fixed wage.

The expression of aggregate wageobtained is:

$$W_t = [(1-\zeta_w)\widetilde{W}_t^{\frac{1}{\lambda_{w,t}}} + \zeta_w(\gamma\pi_{t-1}^{l_w}\pi_*^{1-l_w}W_{t-1})^{\frac{1}{\lambda_{w,t}}}]^{\lambda_{w,t}}.$$

2.5. Monetary policy and government budget constraint

The interest rate established by central bank by taking into account the deviation of output and inflation from the targeted levels is as follows:

$$\frac{R_t}{R^*} = \left(\frac{R_{t-1}}{R^*}\right)^{\rho_R} [\left(\frac{\pi_t}{\pi_*}\right)^{\psi_1}\left(\frac{Y_t}{Y_t^*}\right)^{\psi_2}]^{1-\rho_R}\left(\frac{Y_t/Y_{t-1}}{Y_t^*/Y_{t-1}^*}\right)^{\psi_3} r_t \cdot$$

R^* is the value of nominal interest rate at steady-state and Y_t^* is the natural gross domestic product.

The parameter ρ_R represents the interest ratesmoothness, while the definition of the shock of monetary policy, r_t , is: $\ln r_t = \rho_r \ln r_{t-1} + \varepsilon_{r,t}$.

The constraint of government budget is described as follow : $P_t G_t + B_{t-1} = T_t + \frac{B_t}{R_t}$.

T_t represents the nominal lump-sum taxes and the government spending in relation with the steady-state output $g_t = G_t / (Y\gamma^t)$ follows the process:

$\ln g_t = (1-\rho_g)\ln g_t + \rho_g \ln g_{t-1} + \rho_{ga} \ln Z_{t-1} + \varepsilon_{g,t}, \varepsilon_{g,t} \sim N(0,\sigma_g)$.

3. The Linearized Model

The aggregate constraint for the linearized model is described as follows: (1) $y_t = c_y c_t + i_y i_t + z_y z_t + \varepsilon_t^g$,

The interpretation of the resource constraint is that gross domestic product (y_t) is absorbed by investment (i_t), consumption (c_t), capital utilization costs (expressed in relation to the capital utilization rate (z_t) and the exogenous spending shock (ε_t^g)). In addition, c_y is the state-state share of consumption in output and is equal to $1 - g_y - i_y$, where g_y and i_y are the steady-state exogenous spending-output ratio and investment-output ratio.

In addition, $z_y = R_*^k k_y$, where R_*^k is the steady-state rental rate of capital and k_y is the steady-state capital-output ratio.

The dynamics of consumption function is described as follows:

(2) $c_t = c_1 c_{t-1} + (1-c_1)E_t c_{t+1} + c_2(l_t - E_t l_{t+1}) - c_3(r_t - E_t \pi_{t+1} + \varepsilon_t^b)$, where $c_1 = \frac{\lambda/\gamma}{1+\lambda/\gamma}$, $c_2 = \frac{(\sigma_c - 1)(W_*^h L_* / C_*)}{\sigma_c (1+\lambda/\gamma)}$ and $c_3 = \frac{1-\lambda/\gamma}{(1+\lambda/\gamma)\sigma_c}$.

Consumption (c_t) is defined in a direct relation with the past and expected consumption, with workinghours expected increase $(l_t - E_t l_{t+1})$, with ex-ante real interest-rate ($r_t - E_t \pi_{t+1}$) and theshock factor- ε_t^b .

The investment dynamic is described by the function below:

(3) $i_t = i_1 i_{t-1} + (1 - i_1) E_t i_{t+1} + i_2 q_t + \varepsilon_t^i$,where $i_1 = \frac{1}{1 + \beta\gamma^{(1-\sigma_c)}}$,

$i_2 = \frac{1}{(1 + \beta\gamma^{(1-\sigma_c)})\gamma^2 \varphi}$, φ represents represent the steady state elasticity of the cost function for capital adjustment, while β represents the factor of discount.

The corresponding arbitrage equation for the capital is given by:

(4): $q_t = q_1 E_t q_{t+1} + (1 - q_1) E_t r_{t+1}^k - (r_t - \pi_{t+1} + \varepsilon_t^b),$ in direct relation with expected value and expectedcapital rental rate ($E_t r_{t+1}^k$) and inverse relation with therisk premium shock and ex-ante real interest rate.

$$q_1 = \beta\gamma^{-\sigma_c}(1 - \delta) = \frac{1 - \delta}{R_*^k + (1 - \delta)}.$$

The production function is described by the following equation: (5) $y_t = \phi_p(\alpha k_t^s + (1 - \alpha) l_t + \varepsilon_t^a)$.

The production of output by firms is based on two components: capital (k_t^s) and labor (l_t).

Current capital services used (k_t^s) depends onpreviously capital (k_{t-1}) and capital utilization rate (z_t): (6) $k_t^s = k_{t-1} + z_t$.

Theaccumulated capital (k_t) is depends on investment and its technology disturbance:

(8) $k_t = k_1 k_{t-1} + (1 - k_1) i_t + k_2 \varepsilon_t^i$, where $k_1 = (1 - \delta) / \gamma$ and $k_2 = (1 - (1 - \delta) / \gamma)(1 + \beta\gamma^{(1-\sigma_c)})\gamma^2 \varphi$.

In case of goods market, price mark-up, (μ_t^p), is defined by differentiating the marginal product of labor (mpl_t) and the real wage (w_t):

(9) $\mu_t^p = mpl_t - w_t = \alpha(k_t^s - l_t) + \varepsilon_t^a - w_t$

As firms that are price adjusters have the objective of profit maximization, this leads to the New-Keynesian Philips curve described below: (10) $\pi_t = \pi_1\pi_{t-1} + \pi_2 E_t\pi_{t+1} - \pi_3\mu_t^p + \varepsilon_t^p$, where $\pi_1 = \dfrac{l_p}{1+\beta\gamma^{1-\sigma_c} l_p}$, $\pi_2 = \dfrac{\beta\gamma^{1-\sigma_c}}{1+\beta\gamma^{1-\sigma_c} l_p}$ and $\pi_3 = \dfrac{1}{1+\beta\gamma^{1-\sigma_c} l_p}\dfrac{(1-\beta\gamma^{1-\sigma_c}\xi_p)(1-\xi_p)}{\xi_p((\phi_p - 1)\varepsilon_p + 1)}$.

Rental rate of capital is in an inverse relation with the ratio capital-labor and in a direct relation with the real wages: (11) $r_t^k = -(k_t - l_t) + w_t$.

In case oflabor market the wage mark-up is described by the difference between real salaries and marginal substitution rate working-consumption (mrs_t): (12) $\mu_t^w = w_t - mrs_t = w_t - (\sigma_l l_t + \dfrac{1}{1-\lambda}(c_t - \lambda c_{t-1}))$, where σ_l represents elasticity of labor supply in relation with real salaries and λ illustrates the habit in consumption of households.

In terms of real wages it is assumed that are adjusted progressive in order to reach the target level of wage mark-up, as follows:

(13) $w_t = w_1 w_{t-1} + (1-w_1)(E_t w_{t+1} + E_t\pi_{t+1}) - w_2\pi_t + w_3\pi_{t-1} - w_4\mu_t^w + \varepsilon_t^w$, where

$$w_1 = \frac{1}{1+\beta\gamma^{1-\sigma_c}}, \quad w_2 = \frac{1+\beta\gamma^{1-\sigma_c} l_w}{1+\beta\gamma^{1-\sigma_c}}, \quad w_3 = \frac{l_w}{1+\beta\gamma^{1-\sigma_c}} \text{ and}$$

$$w_4 = \frac{1}{1+\beta\gamma^{1-\sigma_c}}\frac{(1-\beta\gamma^{1-\sigma_c}\xi_w)(1-\xi_w)}{\xi_w((\phi_w - 1)\varepsilon_w + 1)}.$$

The monetary policy equation is described as follows:

(14): $r_t = \rho r_{t-1} + (1-\rho)\{r_\pi\pi_t + r_Y(y_t - y_t^p)\} + r_{\Delta y}[(y_t - y_t^p) - (y_{t-1} - y_{t-1}^p)]) + \varepsilon_t^r$.

The authorities responsible with the monetary describe a generalized Taylor rule and adjust the interest rate (r_t) based on information regarding inflation and output gap. The parameter ρ captures interest rate smoothing degree.

The linearized system is composed of 14 equations and 14 endogenous variables: y_t, i_t, q_t, c_t, i_t, k_t^s, k_t, z_t, r_t^k, μ_t^p, π_t, μ_t^w w_t, l_t, r_t.

The stochastic behavior of the system of linear rational expectations equations is driven by seven exogenous disturbances which follow a first-order autoregressive dynamic: productivityfactor(ε_t^a), risk premium (ε_t^b), investment technology (ε_t^i) ,wage mark-up (ε_t^w), price mark-up(ε_t^p), exogenous spending (ε_t^g) and monetary policy (ε_t^r).

4. Solution and Analysis of the Model

4.1. Econometric Estimation Methodology

In the current research I have proposed to analyze the way in which the proposed DSGE model responses to the economic matters of the three analyzed countries: Poland, Hungary and Czech Republic.

I have chosen to estimate the DSGE model through a Bayesian approach, using Matlab and Dynare tool as this approach is able to give estimates based on the a-priori distributions assumed of the parameters and the information brought by the seven observed variables (extracted with the Kalman filter maximization of the likelihood function), in line with F.Canova, 2007, pp. 26-45, inthe article *"Methods for Applied Macroeconomic Research"*, and Johannes Pfeifer, 2014, pp. 1-150 in the article*A Guide to Specifying Observation Equations for the Estimation of DSGE Models*.

Moreover, using the Bayesian approach I was able to include in the estimation the seven shocks of the model (each one for each observed variable) and to estimate their standard deviation.

I have used for the estimation of the model 350,000 Metropolis-Hastings draws, with a scale of 0.3, in case of each of the three countries, in line with Geweke, J. (1998), *"Using simulation methods for Bayesian econometric models: inference, development and communication"*, pp. 1-75 and with Kimball, M. (1995), *"The quantitative analytics of the basic neo-monetarist model"*, pp. 1241-1277.

4.2. Calibration and prior distribution of the parameters and parameter estimates

One important step of estimation of a DSGE model consists of calibration of the model's parameters.

Regarding the choice of the prior distribution, a number of parameters were kept fixed from the start of the exercise.

The standard errors of shocks are defined as inverse-gamma distributions, having the characteristics described in the table below.

Table 1. Parameters calibrated -shock factors

Symbol	Description	Value
ρ_a	the t-1 term coeficient, in the AR process ε_t^a	0.968
ρ_b	the t-1 term coefficient of the AR process ε_t^b	0.27
ρ_g	the t-1 term coefficient of the AR process ε_t^g	0.9928
ρ_i	the t-1 term coefficient of the AR process ε_t^i	0.7165
ρ_R	the t-1 term coefficient of the AR process ε_t^r	0
ρ_p	the t-1 term coefficient of the process ε_t^p	0
ρ_w	the t-1 term coefficient of the process ε_t^w	0
μ_t^p	the coefficient of the η_t^p IID-Normal price mark-up shock (error term)	0
μ_w	the coefficient of the η_{t-1}^w IID-Normal wage mark-up shock (error term)	0
ε_t^p	price mark-up disturbance	10
ε_t^w	wage-markup disturbance	10

Other parameters, such as the discount factor, β , is calibrated to be 0.9994, which is the mean of the sample of the quarterly real interest rate, while the exogenous spending-GDP ratio is set at 18%. The demand elasticity for labor, λ_w, is equal with 1.5, the degree of wage stickiness, ξ_w, is 0.7937, the degree of price stickiness, ξ_p, is 0.75, which is in accordance with the assumptions with the calibrations proposed by the author Mihai Copaciu (2012), in the article "*Estimation of an open economy DSGE model with financial and employment frictions for Romania".*

Table 2. Parameters calibrated

Symbol	**Description**	**Value**
α	share of capital in production	0.4
β	is the discount factor applied by households.	0.999
σ_c	elasticity of intertemporal substitution between consumption and leisure	1.5
ϕ_p	reflects the presence of fixed costs in production (one plus the share of fixed costs in production)	1.5
ρ_{ga}	the degree in which the productivity shock impacts the exogenous spending	0.51
φ	the steady-state elasticity of the capital adjustment cost function	6.014
λ	the habit parameter in consumption (external consumption habit)	0.636
ξ_w	the degree of wages stickiness	0.794
σ_l	the elasticity of labour supply with respect to the real wage	1.942
ξ_p	the degree of price stickiness	0.75
l_w	wages indexation to past inflation indicator	0.324
l_p	the degree of price indexation to past inflation	0.329
z_t	the degree of capital utilization	0.27
δ	depreciation rate of capital	0.0246
λ_w	demand elasticity for labor	1.5
g_y	steady-state exogenous spending-output ratio	0.18

Finally, parameters used for the quantification of monetary policy rule follow a standard Taylor rule and are calibrated as described in the table below:

Table 3. Parameters calibrated-Taylor rule

Symbol	Description	Value
r_{π}	the coeficient of inflation in the interest rate Taylor rule	1.488
ρ	the degree of interest rate smoothing	0.826
r_{Y}	the coeficient of the output-gap in the interest rate Taylor rule	0.059
$r_{\Delta y}$	the coeficient of the output gap variation (t, t-1)	0.224

I have also analyzed the posterior distribution of parameters and standard deviation of shocks, before and after the optimization using Metropolis-Hastings algorithm. The results of the posterior distribution of the parameters obtained through the Metropolis- Hastings sampling algorithm was based on 350,000 draws and 2 Markov Chains.

4.3. Data Set

The dataset used in this paper were collected from Eurostat Database, Federal Reserve Economic Data -FRED –St. Louis Fed and European Central Bank-ECB, National Bank of Czech Republic, Hungary and Poland for the period: 2001q1 and 2015q4, for a quarterly frequency.

The seven observed quarterly macroeconomic variables are the following: real GDP, consumption, investment and wages, hours worked, GDP deflator and short-term nominal interest rate.

The GDP, investment (gross fixed capital formation-namq_gdp_c) and consumption series (final consumption expenditure in current prices (namq_fcs_c) were collected from Eurostat site, being expressed in Eur millions, in current prices. Regarding the real wages, I have collected from Eurostat the quarterly wages series ([namq_nace10_c]), representing the gross wages and salaries in Eur millions. All these four variables: investment, consumption, wages and gross domestic product are deflated by gross domestic product deflator for the use of real variables and expressed per capita, being divided by the number of employees (16 years to 64 years, part-time and full-time employment-Eurostat series: [lfsq_epgais]).

All the real variables (real gross domestic product, investment, consumption andsalaries) have been expressed in 100 times log, in order to get an evidence of the real growth rates.

In terms of monetary policy, given the high volatility of ON interest rate, I have collected the daily rates for PRIBOR 3M, BUBOR 3M and, WIBOR 3M, from 2001q1 and I have computed an average interest rate for each quarter during 2001 q1 to 2015 q4.

The series used in Dynare soft for the observable variables were: the log difference of real GDP, the log difference of real consumption, the log difference of real investment, the log difference of real wages, the log of the index of hours worked, the log difference of GDP deflator and the quarterly interest rate.

Once all the observed variables are seasonally adjusted and tested for stationarity in Eviews 7, imported in Matlab for a further processing with Dynare 4.4.0 tool.

5. Econometric Analysis of the Model

5.1. Interpretation of Apriori and Aposteriori Distribution Graphs

For each parameter the graphs illustrates the prior and the posterior distribution in one figure (the grey line representing the prior, the black line the posterior). The distributions are different from each other, so the parameters are identified.

The dotted green line represents the value at the posterior mode, which in case of all parameters is approximately the center of the posterior distribution.

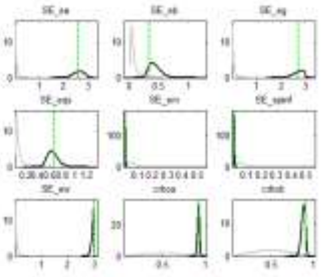
The posterior distribution is also distributed around the mode. Moreover, in almost all cases the posterior distribution has the form of a normal distribution and is close, but still different from the a-priori distributions.

This means that the observable variables bring new information than the assumptions made regarding the a-priori distribution.

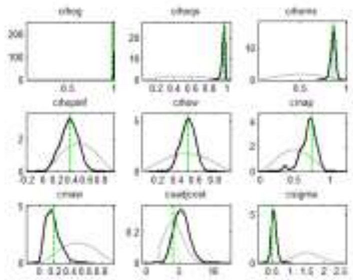
Each graph contains the a-priori assumptions that were made regarding each parameter's mean and, respectively, the a-posteriori results with the mode estimated by numerical methods, posterior approximations of the standard deviations, all obtained after the maximization algorithm, the posterior mean obtained from MH algorithm for the 350,000 draws on the 2 chain that I chose.

Overall, according with the a-priori and a-posteriori distribution graphs and t-statistics, all estimated parameters are significantly different from zero. This is true for all the standard errors of all the shocks.

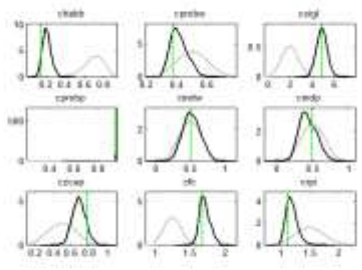
Poland



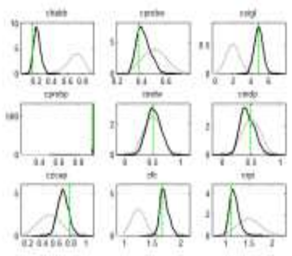
Graph 9. A-priori and a-posteriori distribution



Graph 10. A-priori and a-posteriori distribution

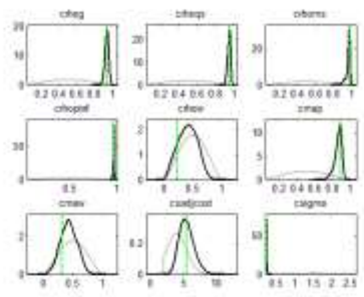


Graph 1. A-priori and a-posteriori distribution

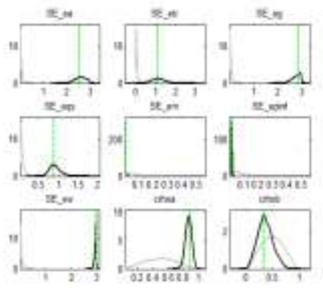


Graph 2. A-priori and a-posteriori distribution

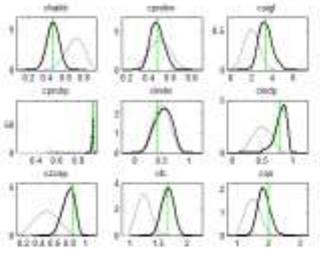
Hungary



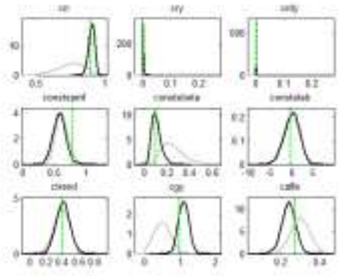
Graph 3. A-priori and a-posteriori distribution



Graph 4. A-priori and a-posteriori distribution



Graph 5. A-priori and a-posteriori distribution



Graph 6. A-priori and a-posteriori distribution

The tables described above contains in the first part the a-priori assumptions for the mean of each parameter and in the second part the a-posteriori results, estimated by numerical methods, the posteriori estimation of the standard deviation (obtained after the maximization algorithm), the posterior mean, the 10% and 90% percentiles (confidence intervals) obtained from the MH algorithm, for the 350,000 draws on the 2 chains that I have chosen.

5.2. The Model's Stability Analysis –Blanchard-Kahn Condition

The system is stable according with the analysis of the eigenvalues of the system.

In order to meet the Blanchard-Kahn condition, there must be as many roots larger than one in modulus as there are forward-looking variables in the model.

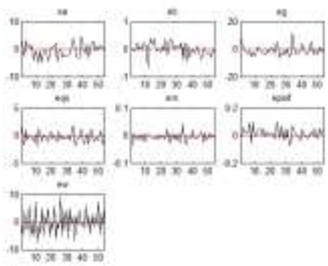
According with the output of Matlab, in the model there are 12 eigenvalue(s) larger than 1 in modulus for 12 forward-looking variable(s), which means that the Blanchard-Kahn condition is met. The rank condition is also verified.

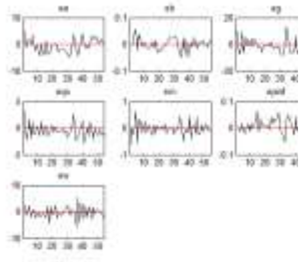
5.3. Analysis of Smoothed Variables and Shocks

The posterior distribution of smoothed endogenous variables and shocks, i.e. infers about the unobserved state variables using all available information up to T: $x_{t/T} = E[x_t / I_T]$.

Using the smoothed shocks as a check for the model, the shock realizations are around zero (being white noises).

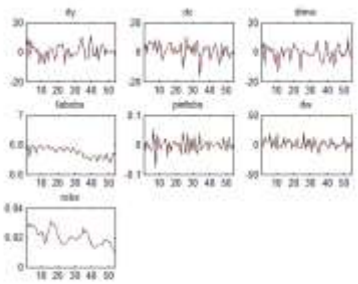
Hungary **Poland**

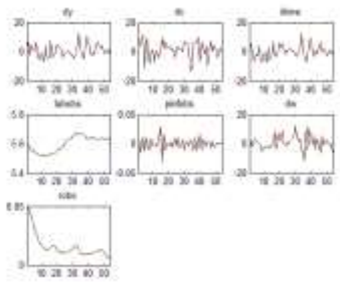




Graph 7. Smoothed shocks **Graph 8-Smoothed shocks**

Hungary **Poland**





Graph 9. Smoothed Variables **Graph 10. Smoothed Variables**

According with the estimates all the seven shocks are significant, taking into account the 90% HPD (highest probability density) confidence interval, that indicates the fact that with a 90% probability, the parameter is in the calculated interval.

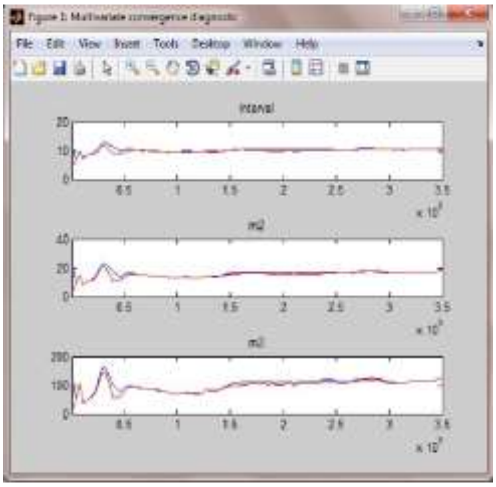
5.4. Brooks and Gelman's Markov Chain Monte Carlo (MCMC) Convergence

As resulted from the convergence graphs analysis for 2 Monte Carlo Chains, from the three economies analyzed, I concluded that in case of Czech Republic the convergence condition of the series is not respected, taking into consideration a number of 350,000 MCMC draws. The acceptance ratios of the MCMC are lower than the acceptance limit of 25% (chain 1: 9.452% and chain 2: 8.3891%). As a result, analysis of the steady-state does not lead to accurate result (the reason why this country was excluded from the further analysis).

The current acceptance ratio per chain were the following, at the level of each country: for Romania- chain 1: 26.5536% and chain 2: 23.9725%, for Poland-chain

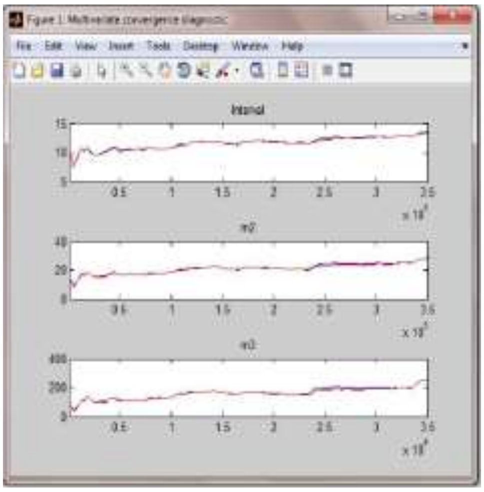
1:21.1708% and chain 2:24.6608% and for Hungary-chain 1:36.2359% and chain 2:37.0039%.

Poland



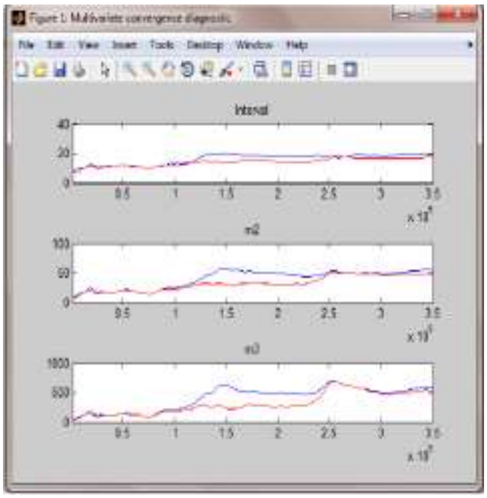
Graph 11

Hungary



Graph 12

Czech Republic



6. Conclusion

The proposal of this working paper is to analyze whether the model proposed for the economy of United Statesby Frank Smets and RafaelWouters in 2002, pp. 1-70 and 2003, pp. 1-57 and also in articles for the economy of Euro Area published in 2005, pp. 1-52 and pp. 2-36, and in 2003, pp. 1123-1175 and pp. 1-57 is suitable for the economies from Central and Eastern Europe.

Taking into consideration the tests performed I conclude through the current working paper that the results of the model are effective for the economy of Poland and Hungary. This is confirmed also by the analysis of the estimations performed: convergence analysis, Blanchard-Kahn stability of the model, the analysis of the a-priori and a-posteriori distributions and also by the analysis of parameters and variables identification. For the three economies analyzed, I concluded that in case of Czech Republic the convergence condition of the series is not respected, taking into consideration a number of 350,000 draws. As a result, analysis of the model for this country is not accurate, so it was excluded from the further analysis.

To conclude, the model has achieved the purpose of analyzing of the main drivers of the economic growth, putting an eye on the frictions of these three economies (seven shocks- reduced to the number of the seven observed variables).

The model can be analyzed also taking into account the policy shocks: exogenous spending shock (that includes government spending-fiscal policy instrument), price and interest rate shocks (monetary policy shocks).

Regarding the monetary policy, I can conclude that the Taylor rule proposed by the model approximates the behavior of the Central banks of the two Central and Eastern Europe countries: Poland and Hungary.

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The Companies and the Climate Change: Differences between Perceptions and Practices

Ionica Oncioiu[1]

Abstract: The companies are taking action in response to the increasing number of regulations related to the climate change, but also in anticipation to the future developments of public actions in this domain. For the operating companies, the fight against the climate change can also result in investments and business opportunities through, among others, in a more efficient use of the natural resources and the energy, less waste, streamlining logistics, diversification of energy sources, acquisition of advantageous positions on the market and introduction of new means of participation of the consumer and the provider. This article examines the steps taken by EU companies in the current context, conditioned by the public objectives regarding the climate change. The paper concludes that the efforts in eco innovation are led by developed small and medium enterprises and are still mainly concentrated in correction measures of environmental damagers than preventive ones.

Keywords: public actions; investments and business opportunities; small and medium enterprises

JEL Classification: G15

1. Introduction

The latest globalization so radically redesigned “in a world of companies” giving them a fundamental impact on the business environment and thus the entire economy. Increasingly fierce competition and rapidly changing technology that lead to business today face increasing pressure in terms of preparing tenders for goods and services. It is becoming more and more difficult for companies to enter the market with a new and innovative, environmentally friendly idea and meet the customer’s demands.

Secondly, the knowledge revolution and the striking manifestation of multiple mutations produced in the world economy have prompted the policy makers, particularly in the more developed countries, to face these realities from a pragmatic perspective. The idea that the company should sponsor an initiative in order to improve the living conditions of the individuals is an outdated pattern of

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thinking. But since initiatives also have an economic impact, created by the added value, the investors may as well be attracted.

The climate change confronts companies with new risks and new opportunities. The intensification of the emissions regulations weighs heavily on the issuing companies who face penalties and lawsuits unless they comply. The measures that affect prices of GHG emissions have an effect on the production costs and decrease the value of the companies that do not act in this field. Given the growing awareness of the society to the climate change, these companies may find their image tarnished. A growing number of the companies integrate the fight against climate change in their overall strategy. A recent survey among the CEO of companies of the Fortune 500 index revealed that 70% of the 130 respondents believe that the climate change will be a key element in their business decisions in the next five years.[1]

Pioneering companies have begun to take action against climate change as early as the '90s. Since 2005, companies' efforts to reduce emissions have become widespread, a development that was largely triggered by the implementation of the Community system of trading emission quotas. Besides compliance with the current regulations and anticipating future developments, companies manage their greenhouse gas emissions under the energy cost reduction plans with regard to the diversification strategies of fossil fuels, to conquer new business markets and foster their reputation. They also lend greater attention to the expectations of the investors and consumers, and are well aware that it is useful to influence the debate on policies against climate change at both international and national level.[2]

For many companies, participation in discussions regarding the policies against climate change is a natural part of their strategy: any regulatory policy on GHG emissions will define the rules and change the competitive landscape, which promote certain sectors, activities and businesses. To maintain some control over their part of future activity, companies find it useful to monitor and anticipate the envisaged measures (Hoffman & Woody, 2008).

The technology transfer plays a central role in the international fight against the climate change architecture. As fundamental pillars of the development of clean technologies, companies are expected to help the countries where they operate to meet their needs to develop technological and innovation capacities, i.e, share skills and train local staff to their development design and use of clean technologies.

Looking ahead to 2020, the projection of greenhouse gas emissions based on existing policy measures of the Member States, The EU's TV is on track to achieve the target of 2020. However, it can also be considered as already existing and

[1] http://www.wbcsd.org/plugins/DocSearch/details.asp?type=DocDet&ObjectId=Mzc2ODA.

[2] http://dx.doi.org/10.1787/9789264090255-fr.

measures not enough to put the EU on track to meet the goal of 40% reduction of GHG for the next decade until 2030 as planned[1].

Romania has already been affected by the climate change. IPCC projections indicate that the climate is getting warmer during this century at least in line with the global projections and precipitation patterns will move and there will be wetter winters and drier summers. In 2007 already, Romania experienced the warmest year in two decades (average temperature of 11.5° C against an average of 25 years of 8.4 ° C) 2.3 and the most severe drought over the past 60 years, while in 2005 there were historical floods, which caused 76 deaths and property damages. The effects of these extreme weather events affected the country in significant economic losses in agriculture, transport, energy supply and water management. Consequently, mitigation and adaptation to the climate change are top priorities for Romania.

At a regional level, the Central Region is the first Romanian region to begin to develop a regional policy on climate change, on the basis of a program funded by the Norwegian EEA grants (RO 07). The program supports the local authorities in three municipalities of the central region of Romania in their implementation of the current legislation on climate change by developing strategies and plans on adaptation to climate change. The program will also support the implementation of meteorological studies on regional and local climates. In addition, the program will test adaptation solutions to climate change for the transport, energy and construction. The program beneficiaries are decision makers and both regional and local decision-making authorities, the research community and education, NGOs, civil society and the general public.

To compete effectively in the development of a low carbon economy, EU companies need to act outside their immediate borders. In this context, companies must focus on four areas as part of their emission reduction strategy: 1) they can achieve substantial multiplier effect through the dissemination of their disclosure practices and reduce all emissions throughout the Supply Chain; 2) a change in the consumer's behavior is essential for the GHG emissions reduction measures to be successful, the companies plan to increase interventions to consumers more often in their strategies against the climate change. They can also extend their action by other means: 3) by participating in the policy development and 4) by assisting the transfer of technology and skills.

[1] European Commission, European Council Conclusions 23 and 23 October 2014 http://www.google.ro/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0ahUKEwjj452u7trOA hUHPRQKHfUGCPEQFggaMAA&url=http%3A%2 F% 2Fwww.consilium.europa.eu 2Fuedocs%%% 2Fcms_data 2Fdocs% 2Fpressdata 2Fen 2Fec%%% 2F145397.pdf & usg= AFQjCNECPJHGfWoLyYoq9QJx-o61-NqJ4g & sig2 = xd8nSbs2rDwZSW8MWMHhZA.

If the current economy continued to unfold in a black-white scenario, the contradictions of the existing model would generate, undoubtedly, a large-scale collapse in all areas of society. Through our analysis, we will try to answer some key questions as: Why companies should fight against climate change? The greenhouse effect is presented as the product of a natural phenomenon or would it be that the companies are 'guilty' due to their facts and actions? What is the role of Europe in this world of constantly changing companies? How did the climate change reached to this powerful interaction between ethics and business?

One possible answer could be that to find the answer we usually share three concepts that are closely related: morality, ethics and deontology.[1]

This article examines the measures taken by EU companies in the current context (yet evolving) conditioned by the public objectives on climate change. This paper is organized into four sections. The first section contain the introduction and an overview of the conceptual framework for the study. The next two sections describe the construct and hypotheses' development and research methodology, with associated findings. The final section provides a discussion of the results, the relevance of this research to literature and presents the conclusions and recommendations reached from the study.

2. Companies and Climate Change: the Design of our Future

The companies are the most important agents of the economic and technical progress. By bringing material progress, they create favorable conditions for the emergence of other progress. It is a fact that we cannot question.

The easiest targets for GHG reduction are the improving of energy efficiency (by enhancing the heat insulation and the installation of lighting systems of high energy production, for example) and, more generally, the decline in energy consumption.

Pew's Studies Center for Global Climate Change (Prindle, 2010) show that increased energy efficiency can considerably reduce emissions and generate substantial financial benefits. For many companies the improvement of the energy efficiency means primarily to apply it to the extent that it often results in cost reduction.

For example, Carrefour, considering that almost half of the emissions directly from the activity of stores and logistics activities came from energy consumption, adopted a target of 20% reduction in energy consumption per square meter of their commercial surface in the group between 2004 and 2020. The measures adopted to achieve this objective include the installation of energy management devices,

[1] http://www.irbms.com/pdf_word/Charte-ethique-prevention.pdf.

lighting systems of high energy production, and closed freezers. In 2008, the group reduced its energy consumption by 6% (kWh/m2) compared to 2007 (www.carrefour.com)

As for Alcatel Lucent, the energy consumption lies in the bulk of GHG emissions related to its operations. To reduce consumption, the company examines and implements procedures such as the grouping of sites, temperature control and replacement of lighting. For example, it decreased its energy consumption over the past two years by consolidating its intensive energy data centers. At the end of 2008 it had already reduced their number from 25 to 17. In Stuttgart (Germany) it had saved about 5 MWh and reduced CO2 emissions by 2 tons by installing insulating devices, windows and new lighting systems and replaced the air conditioning by natural ventilation. (www.alcatel-lucent.com)

Another company concerned with the climate change is Bayer which assesses "the Climate Check" of its production processes around the world, raw materials, logistics and energy included, to determine their interaction with the climate. This control has two components: “the Climate Print”, a climate print indicator which provides the necessary data for assessing the impact of different alternatives of the processes and various sites on the climate, and the “Climate impact – analyzed” a systematic analysis of the impact on the climate of manufacturing processes and production plants. Once the potential savings in CO2 emissions are identified, the company evaluates the optimization measures of processes and plants. (www.climate.bayer.com)

For an overview regarding how the companies that participated in the OECD survey integrate the climate considerations into their structure, we can analyze the numbers in Figure 1.

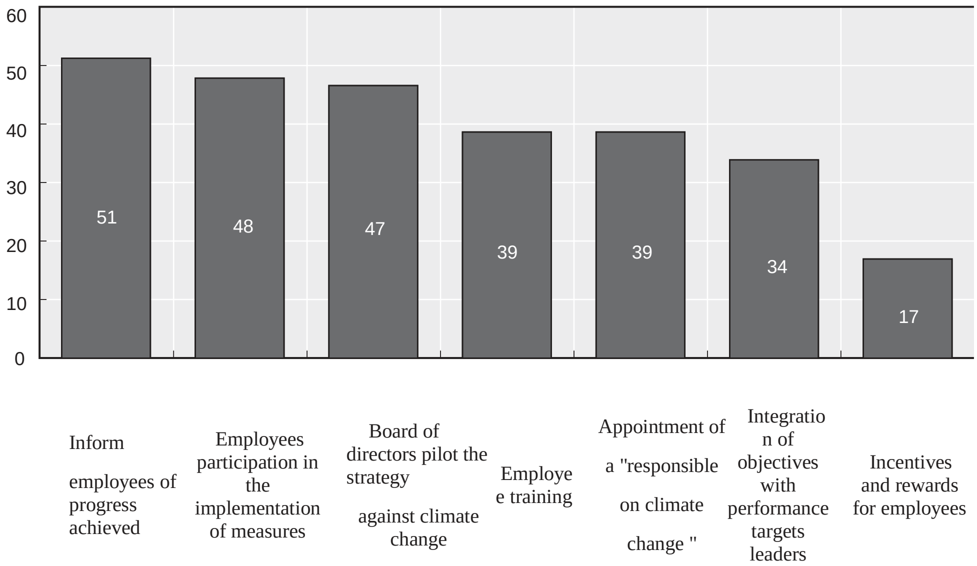

Figure 1. Internalization considerations associated with the climate change in companies

Source: OECD survey on business practices to reduce emissions (2010) https://www.oecd.org/corporate/mne/46282309.pdf

As it can be seen from those presented so far, some companies have adopted regulations and established guidelines and monitoring systems of environmental arguments in order to prevent false or misleading environmental claim ("*greenwashing*"). These regulations aim to protect the consumers, but are also useful to companies wishing to provide honest information on the measures adopted to improve the environmental performance of their products.

However, an essential part of the efforts done by the company in the specific industry to tackle climate change and achieve a "green growth" will be the eco-innovation. In recent years, since the environmental policies and innovation are likely to reinforce each other, it is necessary to support this trend in order to simultaneously achieve ambitious environmental and socio-economic objectives.

Generally speaking, the various eco-innovation activities can be analyzed in three dimensions: the objectives (target areas of eco-innovation: products, processes, marketing methods, organizations and institutions); the mechanisms (terms of changes to objectives change, redesign, alternatives and creation); the impacts (effects of eco-innovation on the environment). (Fussler & James, 1996).

In short, in a world where success is almost necessary, it can be said that sustainable development brings about "prosperity" for companies because its message is consistent with the perspective of an ecological reconciliation with nature and with creating a challenging economic environment for businesses. Sustainable development requires a new type of reference to reality and also the development of new forms of organization of the specific work frame – "smart economy" (clusters, polestars competition, industrial parks, business incubators, industrial sites, etc.); it is important to develop some voluntary eco-innovation roadmaps at a national level in order to facilitate the assimilation of the policy by the Member States and also to increase confidence in the environmental technologies.

3. Data and Methodology

The research methodology is used in achieving the stated objectives of this study. We used Yards Formula for sample size determination to select 104 entrepreneurs that constitute our samples (confidence level is 95% and error tolerance is 5%). The research design used in this study is survey research method. The research design used in this study is survey research method. This is a data collection method that involves the collection of primary data from respondents chosen from a given population through well-structured questionnaire. The decision to structure the questionnaire is predicated on the need to reduce variability in the meanings possessed by the questions as a way of ensuring comparability of responses. The involved sectors in the investigation are: agriculture, manufacturing, environmental and construction industries. Data collected from the questionnaire were analysed, summarised, and interpreted accordingly with the aid of descriptive statistical techniques such as total score and simple percentage. While inferential statistics such as correlation coefficients was used to proof the level of significance in testing stated hypothesis. There are various statistical tools that can be used for testing of hypotheses but this research work will be limited to the use of correlation coefficient analysis. The value of the Pearson can range from 1.00 to +1.00. These values indicate the strength of relationship between two variables. We seek to determine the relationship between eco-innovation and environmental performance components.

The questionnaire is divided into two parts: the entrepreneurs' perception towards the eco- innovation in business and the hypothesis on the following assumption:

H_0: There is no relationship between eco-innovation and environmental performance.

H_1: There is a relationship between eco-innovation and environmental performance.

4. Discussion of Results and Findings

Table 1 shows the results obtained using the Pearson correlation coefficient with participants overall shift to inspect hypothesis and indicates a significant relationship between eco-innovation and environmental performance. The simple coefficient correlation between environmental performance and the components of eco-innovation (eco innovation product) recorded a 0.394 value indicating a medium relationship with a 0.01 level of significance, (environmental responsibility) recorded a 0.332 value indicating a medium relationship to environmental performance with a 0.01 level of significance, (green supply chain management) recorded a 0.404 value also indicating a medium relationship to environmental performance with a 0.01 level of significance, (cleaner production) recorded a 0.301 value indicating a medium relationship to environmental performance with a 0.01 level of significance. Since all the components of eco-innovation are positively related to environmental performance, we therefore accept the alternative hypothesis and reject the null hypothesis. This implies that there is a positive relationship between eco-innovation and environmental performance. The results support our predictions of hypothesis.

By analysing the results of the survey, eco-innovation brings a large number of socio-economic benefits (over 70% increases in eco-efficiency) both for firms directly involved in its production and society as a whole (over 25% reductions of pollution). Due to the increasing impact of environmental policies and the reducing of the marginal costs of environmental policies by 50%, eco-innovation resulted from introducing innovation technologies is one of the main priorities regarding the strategy European SMEs. The new guiding principle for the reform of regional policy has always focused on helping the less developed regions face serious problems in terms of reducing the impact of climate change. Opportunities are created every day and can be extrapolated within the most remote areas of the continent. A regional approach requires the involvement of regional authorities in the development and policy of the overall strategy. Not every region or province has had a glorious past with successful entrepreneurs and creative universities. Sometimes things need to be created from scratch.

Our study also reveals that more than half (58%) of the respondents involved in only one green product at any particular period of their entrepreneurial activities. It was also discovered that 42% of the respondents believe to a high extent that development of green product increases productivity. However, 75% of the respondents believe to a very high extent that eco-efficiency level determines environmental performance.

Table 1. Correlations of eco-innovation and environmental performance

		Eco innovation product	Environmental responsibility	Green supply chain management	Cleaner production	Eco - efficiency
Eco innovation product	Pearson Correlation	1	.475(**)	.332(**)	.337(**)	.394(**)
	Sig. (2-tailed)		.000	.000	.000	.000
	N	100	100	100	100	100
Environmental responsibility	Pearson Correlation	.475(**)	1	.463(**)	.317(**)	.332(**)
	Sig. (2-tailed)	.000		.000	.000	.000
	N	100	100	100	100	100
Green supply chain management	Pearson Correlation	.332(**)	.463(**)	1	.452(**)	.404(**)
	Sig. (2-tailed)	.000	.000		.000	.000
	N	100	100	100	100	100
Cleaner production	Pearson Correlation	.337(**)	.317(**)	.452(**)	1	.301(**)
	Sig. (2-tailed)	.000	.000	.000		.001
	N	100	100	100	100	100
Eco - efficiency	Pearson Correlation	.394(**)	.332(**)	.404(**)	.301(**)	1
	Sig. (2-tailed)	.000	.000	.000	.001	
	N	100	100	100	100	100

5. Conclusion

The companies are taking action in response to the growing number of regulations (Goga & Modiga, 2010) related to the climate change, but also in anticipation to the future developments of public action in this area. On the other hand the complexity of economic life in terms of competition imposed by the market economy increases the role of information in decision making. Its quality depends on the quality of current and future innovative decisions taken and thus the results.

One way for the companies to participate in the policy process is to take part in public consultations. There is no single formula to determine the number of visits and their duration, and the risk that the latter are deemed insufficient or inadequate will always be present. This is particularly true in an area as complex as the climate change, which concerns the entire industry and economy. As part of the recent consultation process set up by the French government to develop new policies and guidelines in many areas related to the environment, including climate change (the "Grenelle" of the environment), five colleges have been set up and closely participated in this exercise: the state, local communities, NGOs, employers and trade unions[1].

The results of this study show that the hurdles and the eco-innovative commitment to innovative green activities are closely linked to the performance of the adoption of the business. At the same time, the hurdles not only businesses in eco-innovation can discourage green strategies of the European companies, but may also hinder the implementation of the paramount importance EU policies.

Finally, in many cases, companies have found that what is good for the environment is not necessarily bad for business. In fact, it can lead to a competitive advantage due to better overall management, optimization of the production processes, reduction of the resource consumption, and the like. The experiences of EU initiatives also show that a significant number of companies are increasingly interested in implementing cleaner production to improve their economic and environmental performance.

Today, most European companies are focusing on the environmental dimension of sustainable innovation by improving their green products. They try to solve the equation: eco-innovation = sustainable market + New Business Models. Therefore, today's eco-innovation is a key issue which requires a certain approach. Also, "going green" is gradually considered as a potentially profitable management for the European companies in recent years. It is important to note that market orientation is not to be confused with assuming that small businesses want to compete in a global market by exporting their eco products.

[1] http://dx.doi.org/10.1787/9789264090255-fr .

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Does IFRS Detract from Social Disclosure in Corporate Annual Report and Accounts? Evidence from Nigeria

Arthur Joseph Avwokeni[1]

Abstract: This study examines compliance with the corporate social disclosure requirement of the United Nations and whether their voluntary declaration by the International Accounting Standards Board detracts from compliance. Qualitative, financial and non-financial disclosures, based on core indicators developed by the United Nations Conference on Trade, Aid and Development, were garnered from financial statements prepared before and after IFRS adoption. Overall, corporate social disclosure on employment creation and labour practices; welfare, health and safety; and environment, improve during the IFRS regime. This improvement is associated with size of the firm, not audit identity, ownership or capital structure. This finding provides evidence to clinch anecdotal claims that even in the absence of laws some agents would still operate to meet the information needs of their principals; however, in line with organization theory, policies are needed to guide the actions of man, including the learning organization.

Keywords: Disclosure compliance; corporate social disclosure; social accounting; corporate social responsibilities

JEL Classification: O16

1. Introduction

Information on corporate social issues is needed to assess risks that might affect the company's operations; e.g. existing and potential investors would like to know the relationship of management with customers, employees and the host communities to choose less risky investment portfolios. Thus, corporate social issues can affect a company's valuation. However, the International Financial Reporting Standards, or the IFRS, omit corporate social disclosure in corporate financial reporting on grounds that the issues are outside the financial statements.

Many entities also present, outside the financial statements, reports and statements such as environmental reports and value added statements, particularly in industries in which environmental factors are significant and when employees are regarded as

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an important user group. Reports and statements presented outside financial statements are outside the scope of IFRS (IFRS Foundation, 2014, p. A593).

This statement might have arisen due to the practice in the United Kingdom where environmental accounting reports are presented in separate volumes from the financial accounts. This practice, however, does not rule out the possibility of integrating social disclosures into financial reports; e.g. the policies relating to social accounting may be presented in the part dealing with Statement of Accounting Policies, the Notes on the Accounts may show any material contingent liabilities in respect of social matters, and the financial statements can include social responsibility cost as part of administration expenses. The Chartered Association of Certified Accountants in the United Kingdom organizes "Green Accounting" competition to stimulate progressive practice among firms in environmental accounting, and this may have influenced the creation of a separate volume for environmental accounting.

The International Accounting Standards Board views external financial reporting as a private contract between the management and the owners of the entity (the classical perspective) but believes that corporate financial reporting should also service the financial markets through the provision of information relevant for economic growth and development (the market perspective). However (a very important "however"), it is also important to focus on the entity itself. The Accounting Standards Steering Committee writes:

Economic entities compete for resources of manpower, management and organizational skills, materials and energy, and they utilize community owned assets and facilities. They have a responsibility for the present and future livelihoods of employees, and because of the interdependence of all social groups, they are involved in the maintenance of standards of life and the creation of wealth for and on behalf of the community ("Corporate Reports", 1975).

This ecological view of the Accounting Standards Steering Committee cannot be dismissed because the reporting organization is located within a complex ecology of mutual dependence, interacting with people, material environments and other organizations. In these interactions, the reporting organization takes from and gives to its ecology in both obvious and subtle exchanges. Thus, the reporting organization has a responsibility towards all elements of its ecology, not only towards its owners. The United States has a corporate social performance agenda touching on employee welfare, environment, sex discrimination, equal opportunity, racial discrimination, product quality, safety and drugs. In Nigeria, like the United Kingdom, public policy emphasizes employee welfare and environment. In the area of employee welfare, legislation has gone beyond the usual labour laws to require management to report on its treatment of employees in annual financial reports. There are also pieces of legislation regulating industrial pollution even though there is no requirement to report on activities connected with pollution in financial statements. Although there are laws and programmes intended to reduce the drug problem, which has caused much damage to Nigeria abroad, there is no discernible evidence that drugs and women affairs are legitimate elements in corporate social performance that require reporting in annual financial statements.

Social issues in corporate financial reporting fall within the domain of social accounting, which is a branch of corporate accounting that reports on the responses of corporate entities to social concerns (Asechemie, 1996, p.7). These concerns, which cover social and environmental, vary from one society to another so that each society must establish the limits of social concerns that corporations are expected to report on. Then, social accounting should proceed to set out the items to be disclosed in corporate reports, the valuation principles applicable to those items, and the format for the disclosure. Appropriately, Nigeria has established the social issues of concern that corporate entities must report on (Companies and Allied Matters Act [CAMA], Schedule 5, part III) but there is no adequate responsive social accounting by the accounting profession in Nigeria. The Nigerian Accounting Standards Board, or the NASB, specified the content and format of the statement of value added, which is a financial statement in social accounting, but fails to specify the contents and format of items of corporate social responsibilities. As a result, companies develop templates that carry the descriptive, qualitative information set out in CAMA. This was very unsatisfactory state of affairs. Succour came to the accounting profession when the National Planning Commission adopts the minimum environmental and social disclosure requirements of the United Nations for all corporations ("Nigeria First", 2008); however, the adoption was more in principle as the NASB never took up the enforcement responsibilities. Therefore, whether the companies implement the adoption of the corporate social disclosure of the United Nations is an empirical question. Moreover, the voluntary declaration of the International Accounting Standards Board (or the IASB) on corporate social disclosures has expanded the complexity of this empirical question, which is fundamental because the Financial Reporting Council of Nigeria, which replaces the NASB, is silent on the declaration, suggesting that compliance with corporate social disclosure is optional. Few studies have investigated compliance with the corporate social disclosure of the United Nations. Reverte (2009) investigates characteristics that explain disclosure practices; Iatridis (2013) examines association between environmental disclosure, performance and corporate governance; Van der Laan, Gouldman and Tondkar (2014) compare compliance of shareholder-oriented countries with compliance of creditor-oriented countries. The objective of the present study is different: it examines compliance with the corporate social disclosure of the United Nations and whether the IASB voluntary declaration detracts from compliance. This is fundamental because the United Nations can use the results to evaluate the extent to which listed firms in Nigeria are willing to comply with the corporate social disclosure requirements for all corporate entities.

The study finds that social disclosures on employment creation and labour practices; welfare, health and safety; and environment, improve during the IFRS regime, suggesting that that the voluntary declaration on corporate social disclosure by the IASB makes no impact on compliance. The improvement in corporate social disclosure is associated with size of the firm, not audit identity, ownership or capital structure. These results provide evidence to clinch anecdotal claim in organization theory that in the absence of laws the agents (i.e. management) would still operate to meet the information needs of their principals, i.e. owners and other stakeholders.

The remainder of the paper is structured as follows. Section 2 reviews the empirical literature. Section 3 reports on the background framework which props up the structural hypothesis of the study. Section 4 describes the design and method of study. Section 5 presents the results and concludes.

2. The Empirical Literature

The literature is scanty of empirical studies on corporate social disclosure. In Spain, Reverte (2009) examines whether industry characteristics and media exposure are potential determinants of corporate social responsibility (CSR) disclosure practices. The characteristics investigated are size of the firm (measured by the natural logarithm of market value of the firm), industry environmental sensitivity, profitability, ownership structure, international listing, and media exposure. These characteristics are regressed against CSR ratings using multiple regression equation. The study finds that larger size, higher exposure, and environmental sensitivity of the industry of operation influence CSR disclosure practices, not profitability or leverage. The most influential characteristics are media exposure, followed by size and the industry.

In Malaysia, Iatridis (2013) examines the association between environmental disclosure and environmental performance on one hand, and the association between environmental disclosure and corporate governance on the other hand. A multiple regression is used to model the association expressed in each case, with several control variables: audit quality, the proportion of common equity held by managers and institutional investors, change in management, return on assets, leverage, and size. Environmental disclosure score is calculated for each company in the sample, following the scheme of the Global Reporting Initiative (GRI). Environmental performance is measured by the total amount of hazardous waste produced in tonnes deflated by net sales whilst corporate governance is measured by the existence of audit committee, the existence of independent and non-executive directors in the board and in the audit committee. Iatridis finds that companies with high environmental disclosures are positively linked to environmental performance, and effective corporate governance.

Iatridis goes further to examine the financial attributes of companies with different environmental disclosure scores. The objective is to learn whether companies with effective environmental disclosure and corporate governance face less capital constraint. This objective is logical because, on voluntary basis, companies disclosed social and environmental information about their operation to seek investors' recognition. Environmental disclosure quality (measured by GRI scores), environmental performance, the cross-listing status of the company, and several of the control variables included in the earlier analysis are regressed on scores indicating the extent to which each company faces capital constraint, which is assigned based on Kaplan and Zingales index. Iatridis finds that firms with effective environmental and corporate governance structures are likely to face less capital constraints. Other issues investigated are the value relevance of environmental disclosures, and investors' perceptions of environmental disclosure. Iatridis finds that environmental disclosures provide incremental information that is value relevant and positively related to stock valuation. Also, environmental disclosures are positively associated with investors' perceptions.

Van der Laan, Gouldman and Tondkar (2014) investigate whether firms' corporate social disclosure (CSD) policies are affected by the mandatory disclosure requirements of IFRS. They examine the level of CSD provided by large European and Australian firms for two years prior to adoption of IFRS (2003 – 2004) and two years following adoption (2006–2007). The design partitioned controls into two: (1) shareholder-oriented countries, and (2) stakeholder-oriented countries. They find that CSD increased in shareholder oriented countries, suggesting that shareholders approve of disclosures of social issues.

3. Background and Hypothesis Development

Nigeria has established the social issues that corporate entities must report upon in their annual reports and account. Table 1 lists the social concerns addressed by the Companies and Allied Matters Act (CAMA). These issues, though descriptive, cover employee welfare, work safety process, and corporate responsibility to host communities. However, the format for reporting these items of social concerns in corporate annual reports and account remain the responsibility of the Financial Reporting Council of Nigeria, which replaces the Nigerian Accounting Standards Board (or the "NASB"). The NASB had responded with the value added model of social accounting through the Nigerian Statement of Accounting Standard Number 2 (or "SAS 2"). The statement of value added reports on the wealth created and its distribution to various stakeholders. The figure for value added shows the contribution of the business enterprise to the national income of the country. The distributions to employees in the form of wages, salaries and pensions, represent employees' share of the wealth created, and may be used as the basis of negotiation on increases in salaries or as a measure of employees' satisfaction. The taxes paid by the entity represent government's share of the wealth created.

In addition to NASB response, the United Nations, through its Intergovernmental Working Groups on International Standards of Accounting and Reporting, has developed core indicators for each item of social concerns, which preparers of annual reports and account should disclose for stakeholders to assess their various needs. Table 2 presents the core indicators required in annual reports and account of reporting entities. In 2008, the Federal Executive Council approves of a corporate social responsibility policy, and the Ministry of National Planning Commission adopts the minimum environmental and social disclosure requirements of the United Nations ("Nigeria First", 2008). Thus, like the IFRS adoption, Nigeria also adopts the corporate disclosure of the United Nations and, hence, the study expects compliance by reporting entities. However, neither the then NASB or the recently constituted Financial Reporting Council assumes the responsibility of enforcement; therefore, auditors are under no obligation to enforce compliance. The possibility of non-compliance increases with the voluntary declaration of the IASB on corporate social disclosure because in the present era, the accounting profession is bound by pronouncements of the IASB so that a voluntary requirement may impact practice. Nevertheless, Marston and Shrives (1991) observe that if companies anticipate net benefits of publishing information that exceeds the minimum requirements then they occasionally make voluntary disclosure.

Table 1

Items of Corporate Social Disclosure in Nigeria

S/N	Information Required
1.	Activities of the company in the area of research and development.
2.	Particulars of donations and gifts made for any purpose.
3.	Charity.
4.	Statements on arrangements made, or facilities provided, by the company for the training of employees during the year.
5.	Employee involvement and training.
6.	Employment of disabled persons:
(a)	Applications from disabled persons
(b)	Number of disabled persons employed during the year.
(c)	Continued employment of those that have become disabled while in the employment of the company.
(d)	Training, career development and promotion of disabled persons employed.
7.	Statement of arrangements to secure or protect employees against risk of health and safety.

8. Employee welfare covering:
(a) Housing
(b) Medical care
(c) Pension
9. Statement of action taken to introduce, maintain and develop arrangement aimed at:
(a) Providing employees systematically with information on matters concerning them.
(b) Consulting with employees or their representatives so that their views may be taken into account in making decisions that are likely to affect their interest
(c) Encouraging the involvement of employees in the company's performance through such schemes as employees share scheme.
(d) Creating a common awareness on the part of all employees of the financial and economic factors affecting the performance of the company.

Source: Schedule 5, Part III of CAMA

Moreover, companies that desire international recognition might comply with the corporate social disclosure because voluntary disclosure is driven by the desire for increased international exposure (Young & Guenther, 2003). Furthermore, the United Nations emphasize that corporate social disclosure increases public recognition of an entity commitment, improves its reputation, enhances employees' motivation, and reduces the risk of conflict with third parties (UNCTAD, 2005). Thus, the study hypothesizes substantial compliance with corporate social disclosure requirements of the United Nations.

Table 2

Core Indicator of Corporate Social Disclosure

Group	Sub-group	Indicator
Contribution to Economic development		1. Total sales (contribution to GDP)
		2. Value of imports vs. exports (contribution to balance of payments
		3. Number of employees (contribution to job creation)
		4. Total of all salaries and pension payments (contribution to local economic activity)
Human rights	*Security*	7. Number of enterprise operations with armed security(with breakdown by type of security: company employees, contractor, government)
Labour practices	*Equal opportunity*	8. Number of female employees (with breakdown by function)
	Workforce turnover	9. Employee turnover rate (with breakdown by function)

	Collective bargaining	10. Percentage of total employees covered by a collective bargaining agreement (with breakdown by employee function)
Human capital development		11. Training hours for internal training (wit h breakdown by employee function) 12. Expenditure on internal training (with breakdown by employee function)
Health and safety		13. Expenditure on employee health and safety 14. Work days lost due to accidents, injuries and illness
Community support		15. Donations to civil society (with breakdown by type and nature)
Value chain		16. Number of enterprises in the dependent value chain (with breakdown by supplier, distributor and location)
Corruption		17. Number of convictions for violations of corruption related laws or regulations and amount of fines paid/payable

Source: UNCTAD, International Standards on Accounting and Reporting, ISAR, 29, 2005

4. Design and Method

A data collection instrument was designed and applied to collect data from annual reports and account prepared before and after IFRS adoption by firms listed on the Nigerian Stock Exchange as at 2012/2013 fiscal year. The reports, prepared within the period 2010 to 2011 (pre-IFRS adoption) and 2013 to 2014 (post-IFRS adoption), were read to spot items of corporate social disclosure. A spotted item goes into one of five categories: (1) trade and linkages, (2) employment creation and labour practices, (3) welfare, health and safety, (4) environment, and (5) government and community contribution. The strands of information under each category were carefully selected such that they apply to all firms in the sample. Table 3 lists the items in each of these categories. Each firm in the sample gets a score of one per item disclosed otherwise zero. Then, a compliance score is calculated for each category per company as the number of items disclosed ÷ no. of items in the category. The data for analysis are the cross-sectional distributions of compliance score per firm, which consists of the sum of compliance score for all categories.

Each company in the sample produces two compliance scores, one being for the period before IFRS adoption and the other after the IFRS adoption. Summary data were calculated separately for each period, and differences obtained and tested for significance using the Wilcoxon *Z-test* at 5 per cent alpha level. When the results show that firms disclosed more corporate social information in the post-IFRS, an improvement index, DI, was calculated for categories in which there were clear improvements following Mısırlıoğlu, Tucker & Yükseltürk (2013):

- social items reported in both periods are marked and counted, a
- social items reported only in the post-IFRS are marked and counted, b
- social items reported only in the pre-IFRS are marked and counted, c
- All social items applicable to all firms but not reported are counted and marked, d

Then, the improvement index (DI) was obtained as $\frac{d}{a+b+c+d}$.

Table 3. A priori social disclosure items per category

Employment creation and labour practices	**Government and Community Contribution**
Policy on training and development	Social responsibility projects reported
Total workforce	Donations amounts
Males in the workforce	Information on violation of related laws
Females in the workforce	Amounts of fines paid/payable
Number of physically challenged in employment	
Total number of staff promoted	**Trade and Linkages**
Number of physically challenged promoted	Value added
Employee turnover	Value of imports
% of employees covered by collective agreement	Value of exports
Employee involvement	Local purchasing
Partnership scheme	Imported material/services
Recognition award scheme	
	Welfare, Health and Safety
Environment	Policy on occupational health and safety
Policy on environmental sustainability	Severe and fatal injury
Environmental projects	Quantitative data on performance
Environmental audits conducted	Cost of employee welfare
Quantitative data on environmental performance	Cost of employee health
Catastrophe reserve	Cost of employee safety
Waste management	Projects on employee welfare

Source: Disclosures and indicators based on:

1. Companies and Allied Matters Act, 1990 (amended)
2. SAS 2: Information to be disclosed in Financial Statements
3. United Nations Conference on Trade and Development Guidance on CR indicators in Annual Reports, 2005

The literature identifies several factors that can affect compliance. First, auditors are the monitors of compliance. Hodgdon, Tondkar, Adhikari & Haress (2009) find that audit firm size is positively related to IFRS compliance. Also, Mısırlıoğlu, Tucker & Yükseltürk (2013) find that audit identity influences disclosure compliance. Generally, the big audit firms have more informative, experienced, and analytical staff to monitor compliance with accounting standards, but they might not enforce social and environmental disclosure as the IFRS has declared them optional. Large firms disclose more information than small firms because large firms engage in more activities. The IASB has developed separate accounting standards for small firms because firm size is an important determinant of disclosure and accounting policy choice (Rahman, Pererra & Ganesh, 2002). Also, a company that is highly equity financed will disclose more information than that which is highly debt financed because banks and other creditors receive information on their debts directly from management, and they may even sit on the board of companies. Thus, more disclosures are required when a company is equity oriented than when a company is creditor oriented (cf. Ball, 1995). Put simply, leverage or gearing can affect disclosure compliance. Foreign shareholders in a board can influence compliance because they have greater exposure to international market (Mısırlıoğlu, Tucker & Yükseltürk, 2013). Also, ownership structure, surrogated by free float, FF, can influence the volume of corporate social disclosure. Therefore, a regression of compliance score on each of these factors was embarked upon. Equation 1 is the regression model:

$$\mathrm{CScore}_{\mathrm{it}} = \beta_0 + \beta_1 audit_{it} + \beta_2 leverage_{it} + \beta_3 size_{it} + \beta_4 ForeignOwnership_{it} + FF_{it} + \varepsilon_{it} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots EQ1$$

$\mathrm{CSore}_{\mathrm{it}}$ is the compliance score for firm i at time t.

$$audit = \begin{cases} \text{a dummy variable that } \textit{takes} \text{ on the value of 1 when the firm is audited by one of the Big 4, i.e.} \\ \text{Deloitte, Ernst \& Young, KPMG and PwC otherwise 0} \end{cases}$$

$$\text{Leverage} = \text{total debt to total equity}$$

$$\text{Size is the natural logarithm of the firm market value.}$$

$$ForeignOwnership = \begin{cases} \text{a dummy variable that } \textit{takes} \text{ on the value of 1 when } a \text{ foreigner sits on the board,} \\ \text{otherwise 0} \end{cases}$$

The industry type can affect disclosure compliance due to differing nature of activities; e.g. Reverte (2009) finds that environmental sensitivity of the industry of operation influences corporate social disclosure practices. Also, Rahman, Pererra & Ganesh (2002) note that the nature of activities within an industry could be a reason for the diversity in both the amount and type of disclosure and measurement practices among firms. Therefore, to keep the effect of industry constant, the analysis was restricted to only manufacturing firms. Table 4 presents the firms listed on the Nigerian Stock Exchange by industrial sector.

Table 4

Companies in Nigerian Stock Exchange Market by Industrial Sectors

N/S	Industrial Sector	Number of companies listed
1.	Agriculture	5
2.	Construction/Real Estate	9
3.	Consumer Goods	33
4.	Banking and Insurance Services	48
5.	Pharmaceutical products	10
6.	ICT	11
7.	Industrial Goods	23
8.	Natural Resources	5
9.	Oil & Gas	10

Source: The Nigerian Stock Exchange FactBook 2012/2013

On the basis of the product of firms, the sample is an amalgam of consumer goods, industrial goods and pharmaceutical products, yielding a total sample size of 66 firms. However, as at the time of fieldwork, four firms neither submitted their annual reports and account to the Stock Exchange nor made them available online, reducing the effective sample size to 62 firms. Therefore, with a sample of 62 firms and 5 categories, the matrix of compliance score has 310 observations, where an observation is a compliance score of a firm per category; i.e. Matrix F_{ij} where $i = 1, 2, ..., k = 62; j = 1, 2, ...5$.

5. Results and Discussion

The descriptive statistics are presented in Panel A, Table 5. Pre-IFRS adoption, the distribution of compliance scores follows a normal distribution ($W = .94$, $p > .05$), suggesting that the mean and standard deviation are appropriate statistical summaries of the data. However, post-IFRS, the distribution is non-normally distributed ($W = 80$, $p < .05$) though not badly skewed. In terms of the mean and standard deviation, the average compliance score in the post-IFRS period is higher but the pre-IFRS period is characterized by uniformities in corporate disclosure practices. This profile is sustained by the median and interquartile range. Corporate social disclosure items increase by 81 per cent, decrease by 6 per cent, and no effect on 10 per cent of the total social disclosed items (see Panel B). Overall, corporate social disclosure practices improve during the post-IFRS adoption period ($z = 4.4$, $p < 05$). However, the improvement is observed only with certain reporting categories: (1) employment creation and labour practices, (2) welfare, health and safety, and (3) environment, and this result is influenced by size of the firms in the sample, not dependent on audit identity, foreigner sitting on the board, or capital/ ownership structure.

There was no effect on trade and linkages, the reason being that Nigerian company law (the Companies and Allied Matter Act [CAMA]) and its domestic accounting standards (SAS 2) require entities to report the statement of value added, which capture most of the social items in this category. On government and community contribution, the reason for the no effect is likely to be due to the tax exempt status accorded to items in this category by the Federal and States Governments. Simply, donations or contributions to community development are deductible from taxable income. Although there was no requirement to report on activities connected with pollution in annual financial statements, some companies reported policies on environmental treatments both before and after the IFRS adoption though there was more disclosure during the latter period; moreover, some companies provide performance data on pollution controls. A predominant feature observed in corporate social disclosure is that a large proportion of the companies provide only descriptive information with the costs of such actions and arrangements not disclosed in any of the functional categories in the income statements. One doubts whether these policies on social concerns were actually implemented.

Table 5. Corporate social disclosure statistics

Panel A: Descriptive statistics & normality test	Pre-IFRS	Post-IFRS
mean	1.824	2.355
standard deviation	0.745	1.362
minimum	0.72	0.72
median	1.69	2.11
maximum	3.57	8.01
range	2.85	7.29
interquartile range (IQR)	1.37	1.64
Wilk *W*	.94	.79
p-value	.081	.0005
Panel B: Improvement/detraction statistics		
Improvement (+)	50(81%)	
Detraction (−)	2(06)	
No effect (0)	10(13)	
Total (*N*)	62(100%)	
Panel C: Statistical test		
z-statistic	4.408	
p-value [2-tailed]	.0005	
Panel D: Corporate social disclosure improvement index		
Disclosure category		*DI*
Employment creation and labour practices		0.29(55 observations)
Welfare, health and safety		0.33(35 observations)
Environment		0.43(35 observations)

Government and community contribution	No effect
Trade and linkages	No effect

Panel E: $\text{CScore}_{it} = \beta_0 + \beta_1 audit_{it} + \beta_2 leverage_{it} + \beta_3 size_{it} + \beta_4 ForeignOwnership_{it} + FF_{it} + \varepsilon_{it}$

	β	*t*-stat	*p-value*	Tolerance	VIF
constant	−4.118				
audit	0.742	1.305	.20	−	−
leverage	−0.052	−0.025	.98	.931	1.075
size	.820	3.182	.004	.691	1.445
ForeignOwnership	−0.373	−0.632	.533	−	−
FF	1.443	.835	.411	.713	1.403

$R^2 = .70; F(5,56) = 4.717,\ p = .004$

Companies ought to report qualitative, financial and non-financial data relating to actions and arrangements for social concerns as required by the Intergovernmental Working Group of Experts on International Standards of Accounting and Reporting of the United Nations. The IASB cannot be indifferent to the opinions or questions of the public interest as persons and groups affected by environmental decisions of the firm have a legitimate interest in those decisions. All that the IFRS Foundation need is to insert, in the IFRS accounting policies, a statement of compliance with the social disclosures of the Intergovernmental Working Group of Experts rather than declaring them outside the scope of financial statements. This declaration connotes that social disclosures are optional so that auditors are under no obligation to enforce compliance as companies prepare IFRS financial statements to satisfy current and potential owners of the firm, but even at that investors should be allowed to choose less polluting investments or be able to determine, over time, the relation between an enterprise's environmental impact and its financial position and performance.

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The Influence of Tax Knowledge, Managerial Benefit and Tax Socialization Toward Taxpayer's Willingness to Pay SME's Tax

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Abstract: SMEs play an important role in the economy, as at least 99% of activities in Indonesia has been dominated by SMEs. Indonesian Government begins to collect one percent of sales tax from Small Medium Enterprises (SME) by September 15, 2013. The regulation is effective on SMEs with gross revenue of no more than 4.8 billion IDR per year with permanent establishment. Thus SMEs have very high stream of revenue for government's development projects. The aim of this study was to identify the factors that affecting taxpayer's willingness to pay SME's Tax (i.e tax knowledge, managerial benefit, SME's tax socialization). The population of this study was the whole of 115 "Kelom Geulies" Owners who has business license and registered in The Department of Cooperatives and SMEs, Trade and Industry in 2012. Sampling method conducted in this study was judgement sampling, which consisted of 47 SME's owners. Using multivariate regression, the result of the study shows that tax knowledge, managerial benefit of tax, SME's tax socialization, have positive effect toward willingness to pay SME's tax. This result shows that beside tax knowledge and managerial benefit, tax socialization has a very important role to increase the willingness to pay SME taxes.

Keywords: SME's Tax; Willingness to Pay SME's Tax; Tax Knowledge; Managerial Benefit; Tax Socialization

JEL Classification: L38

1. Introduction

The fundamental objective of any governmental tax system is to reach its genuine expected revenue to finance the state's expenditure. This can only be accomplished if all taxpayers willingly obey with the tax laws. Nowadays, the Indonesian government revenue from taxation sector has reached more than 800 trillion IDR. However when compared to the existing potential tax, it is necessary to take masures in the fields of breakthrough expansion and intensification of tax collection. The evidence suggests, the level of taxpayers compliance in meeting their tax obligations is low. For individual taxpayers, as reported via tax return (SPT) only amounted to 8.5 million while the number of people actively working

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in Indonesia amounted to 110 million (BPS, 2012). That is, the ratio of individual taxpayers to active workers only reached 7.73%. In other words, the level of taxpayer compliance is still low. For enterprises, the reported tax payments through the submission of tax returns only 466.000 while the number of business entities that remained active was about 12.9 million. Therefore, the ratio of enterprises taxpayers to active entities only reaches 3.6%. This figure represents the level of corporate compliance is also low (The Directorate General of Taxes, 2011). Indonesian government sees that SMEs are a potential source of tax revenues as SMEs contribute to the Indonesian GDP was of 61.9%.

SMEs in Indonesia were initially only be seen as an important source of job opportunities and became the main driving force in economic development in rural areas. Nevertheless, lately along with intensifying globalization, emphasizing the importance of the SMEs in Indonesia is also experiencing a change that is expected to serve as one important source of such an increase in non-oil exports in developed countries (Tambunan, 2002).

According to the Government, small and medium enterprises being profit-generating establishments are also expected to pay their dues. Hence, Indonesian government passed a Government Regulation No. 46 of 2013, which entrepreneurs of small and medium enterprises (SMEs) with income less than 4.8 billion IDR in a year must pay one percent of income tax starts in September 15, 2013. The new regulation will enable the state to gain 30 percent of gross domestic product (GDP). Thus, economic potential can increase up to 30 percent of GDP or 2,500 trillion IDR. This regulation doesn't apply to SMEs using knock and down system on their facilities or tax payers who use public facilities for their business like street vendors. Tax base used to calculate the final income tax is monthly turnover. Every month, the taxpayer will pay the final income tax based on final one percent of the monthly turnover.

As well as the development of SMEs can also be seen in Tasikmalaya. Tasikmalaya is one of the cities in West Java which has a special feature, having Small Industrial City Crafts. Potential of Small Industry is growing every year. Until the end of 2011, 3779 units was spread over 130 business centers. The investment reached a value of 276,607,782,300 IDR with a production value of 1,344,791,876,000 IDR. Such SMEs are able to absorb of around 36 472 people (Disperindakop, 2012). Commodities produced reached 23 small industrial commodities such as border, clogs geulis, furniture, batik, sandals, woven rushes, woven pandanus, bamboo crafts, umbrella Geulis, convection and various types of food. A large number of SMEs that have the potential for increasing the tax.

The successful implementation of the new SMEs tax regulations is influenced by tax compliance. Kirchler (2007) claimed that tax compliance is defined as the most neutral term to describe taxpayers' willingness to pay their taxes. Previous research perceived that the low tax compliance in Indonesia can be caused by a lack of understanding of the taxpayer's tax laws (Hardiningsih & Yulianawati, 2011; Widiyanti & Nurlis, 2010), a good perception on the effectiveness of the tax system (Rantung & Adi, 2009), perceived quality services (Hardiningsih & Yulianawati, 2011), awareness of tax (Hardiningsih & Yulianawati, 2011; Suryadi, 2006) and managerial benefits (Lignier, 2009). Based on the above statement, it is necessary to identify factors that influence the willingness of SMEs taxpayer's to pay corporate income tax (i.e. tax knowledge, managerial benefit, tax socialization).

2. Conceptual Framework and Hypotheses Development

2.1. SMEs Income Tax

Small and medium sized enterprises (SMEs) play a significant role in the Indonesian economy. SMEs account for over 99 percent of all firms in all economic sectors and employ over 95 percent of the population. In Indonesia there are three definitions of SMEs from the Ministry of Cooperatives and Small and Medium Enterprises, Ministry of Finance Decree. 316/KMK.016/1994 dated June 27, 1994, and Law No. 20 year 2008. This study follows the last definition from the law of Republic of Indonesia Number 20 year 2008. According to Law No.20 year 2008, micro business are the business that have net assets up to 50 million IDR; or have annual revenue from sales up to 300 million IDR, small businesses are the businesses that have net assets over 50 million IDR to 500 million IDR or have an annual revenue from sales over 300 million IDR to 2.5 billion IDR. While medium-sized enterprises are businesses that have net assets over 500 million IDR to 10 billion IDR or have annual revenue from sales more than 2.5 billion IDR to 50 billion IDR. To increase the country’s revenue, the government has issued government regulation No.46/2013 on Income Tax on Income Derived from Business or Received or Obtained by Taxpayer Who Has a Certain Gross Turnover. Based on the regulation, SMEs who are subject to 1% income tax are individual or corporate taxpayers who receive income not exceeding 4.8 billion IDR a year.

Despite of the reality that SMEs’ increasing the importance on policies and economies of countries, their low performance with accomplishing their tax obligations is identified as a problem (Ahmed & Braithwaite, 2005). Moreover, SMEs are commonly non-professional companies. Therefore, they are more likely to be run by an individual. As a result, their behaviours are closer to individuals. In order to improve tax compliance and bring SME back into the formal sector initiate an awareness campaign among SME to provide information on the taxation system.

2.2. Willingness to Pay SME Taxes

Willingness to pay SME tax can be interpreted as a value contributed by a person who willingly defined by regulation that are used to finance public expenditures by the state does not receive reciprocal services (contra) directly (Dian, 2011). Several factors are likely to affect the willingness to pay the tax, i.e understanding of the taxpayer's tax laws (Hardiningsih & Yulianawati, 2011; Widiyanti & Nurlis, 2010), a good perception on the effectiveness of the tax system (Rantung and Adi, 2009), perceived quality services (Hardiningsih & Yulianawati, 2011), awareness of tax (Hardiningsih & Yulianawati, 2011; Suryadi, 2006) and managerial benefits (Lignier, 2009).

2.3. Relationship Between Tax Knowledge and Willingness to Pay SME Taxes

Knowledge is influenced by many things, among other factors formal education. One's knowledge about an object contains two aspects: positive and negative. Both of these aspects will determine the attitude of a person. The more positive of the knowledge the more positive aspects of the particular object (Fidel, 2004 cited in Ghoni, 2011). According to Nugroho (2012), higher knowledge and understanding of the taxpayer leads to a better conformance with the tax regulations. Taxpayers who do not understand the tax laws are not likely to obey the tax. Thus a better understanding of the taxpayer's tax rules, the taxpayers will be more aware of the sanctions that will be accepted when shirking its tax obligations. Thus, taxpayers who have to understand the rules properly, will usually do the tax rules in accordance with what is stated in the tax laws (Hardiningsih & Yulianawati, 2011). Moreover, research conducted by Widayanti and Nurlis (2010) suggests that understanding and knowledge of taxes have a significant effect on the willingness to pay SME taxes. Thus, it can be hypothesized that:

H1: Tax knowledge has positively influence on the willingness to pay SME taxes

2.4. Relationship Between Managerial Benefit and Willingness to Pay SME Taxes

Managerial benefits are the benefits that may rise due to a condition in relation to tax regulation to retain records, such as better record-keeping, the use of technology, enriched knowledge of financial activities of the business specifically in the form of increased knowledge of their complex accounting information systems and improved business or managerial decisions (Smulders et al., 2012). Managerial benefits can be of better financial information that leads to a faster managerial decision-making. The impact of compliance with the tax system forces business owners to introduce management and financial records in a more effiicient way. Managerial benefits resulting from tax compliance activities are more likely to arise in small organizations where accounting information systems are relatively undeveloped (Lignier, 2009). Research on the benefits of tax-related managerial investigated by Lignier (2009), research conducted in 2006-2007 to investigate the perception of managerial benefits of tax compliance on small businesses that pay taxes. Sample survey of 300 small business taxpayers in Australia, using semi-structured interview to the owner of the company. The results showed that the majority of small business taxpayers recognize that tax compliance has led to a better record and a good knowledge of their financial activities. Another research was conduct by Rametse, N. (2010), a survey of 868 small businesses in Western Australia showed that small businesses claimed the burden of preparing for the implementation of the GST to be an onerous task, with high gross costs incurred, estimated at $7,888 per small business and $5,667 million for the whole Australian economy. Conversely, notwithstanding their high GST start-up compliance costs, three years after the application of the GST, particular small businesses informed managerial benefits resulting from better record-keeping and the usage of technology. Thus it can be hypothesized that,

H2: Managerial Benefit has positively influence on the willingness to pay SME taxes

2.5. Relationship Between Tax Socialization and Willingness to pay SME Taxes

Socialization is a process by which people learn the system of values, norms and patterns of behavior expected by the group as a form of transformation of the person as an outsider to be an effective organization (Basalamah, 2004, p. 196). Tax socialization is the process of delivering information about all things related to taxation to the public in general and taxpayers in particular. In a study conducted by Adiyati (2009), who conducted a study on the effect of taxes on the level of socialization of tax compliance on Jakarta area, suggests that tax socialization has a significant and positive impact on tax compliance. Tax compliance is the individual willingness of a person to pay taxes that is influenced by the person's idea of the principles and the values of morale, of the fairness of the tax, of his or her trust in for the country, of the awareness of how the tax revenues are used, of the tax system of the country, of the tax policy, of the administrative policy, of the individual and the cultural characteristics of the person **(**Lillemets, 2009). Thus it can be hypothesized that,

H3: Tax socialization has positively influence on the willingness to pay SME taxes

3. Methodology

The object of this research was the factors that affect the willingness to pay SME taxes of the SME owner's. This research use primary data and secondary data. Primary data is obtained from the result of questionnaires to SME's owners. The population of this research is Kelom Geulis SMEs in Tasikmalaya. The population consists of 115 SMEs and the samples are from 42 SMEs. This research uses a judgment sampling method. This research uses multiple regression analysis, and the data was analyzed using SPSS 21 software.

3.1. Data Collection Instruments

Self-administered questionnaire was used for data collection. The questionnaire was designed according to the objectives of the research with mostly close-ended questions using a 5 point scale ranging from 1- Strongly disagree to 5- Strongly agree.

3.2. Measurement of Variables

Willingness to pay SME taxes was measured based on an instrument developed by Widayati and Nurlis (2010), and was measured with 5 items. Respondents were asked to indicate: consulting before making tax payments, the documents required to pay taxes, information on how and where tax payments, information regarding the tax payment deadline, giving up some value to pay taxes. The dependent variable was measured with a 5-point Likert scale. Tax knowledge was measured used Widayati and Nurlis (2010) instruments with 6 items. Respondents were asked to indicate: TIN registration for any taxpayer who has income, knowledge and understanding of the rights and obligations of the taxpayer, knowledge and understanding of tax penalties if violated, knowledge and understanding of non-taxable income, and tax rates, knowledge and understanding of tax laws through the dissemination, and knowledge and understanding of tax laws through training.

Managerial benefit was measured using Lignier (2009) instrument that consisted of 6 items, namely the benefits that can be derived from corporate taxpayers (SMEs), the taxpayer will have a neat bookkeeping, easy to know the financial position of their business, easy to determine the level of benefits it has, can monitor cash flow, and can monitor debtors and creditors. Tax Socialization was measured by using a 5-point Likert scale for 4 items, i.e. the contents of the message in the socialization taxes sufficient to provide information on the importance of taxes. Socialization background made the respondents realize the importance of the tax to the state tax. Moreover, the higher frequency of taxes socialization can arouse willingness to pay SME taxes.

4. Results

4.1. Respondents Characteristics

The respondents of this research are 42 the owners of Kelom Geulis SMEs in Tamansari Sub District, Tasikmalaya. Questionnaires were distributed to all 42 respondents, and all questionnaires were returned. The respondents obtained the following characteristics: By Gender, of the 42 respondents, as many as 36 respondents or 85.714 percent are male and 6 respondents or 14.286 percent are female. For more detail, it can be seen in table 4.1. below.

Table 4.1. Respondent Characteristic by gender

Gender	Frequency
Male	36
Female	6
Total	42

Respondent characteristic based on age, of the 42 respondents, as many as 10 respondents or 23.81 percent are aged less than 30 years old, 21 respondents or 50.00 percent are aged 30-45 years old and 11 respondents or 26.19 percent are aged over 45 years old. For more detail, it can be seen in table 4.2 below.

Table 4.2. Respondent Characteristic by age

Age	Frequency
<30	10
30-45	21
>45	11
Total	42

Baed on the period of running the business, of the 42 respondents, as many as 22 respondents or 52.381 percent have been running the business 1-10 years, 13 respondents or 30.95 percent have been running the business for 11-20 years and 7 respondents or 16.67 percent have been running the business over 20 years. For more details, it can be seen in table 4.3 below.

Table 4.3. Respondent Characteristic based onperiod of running the business

Period	Frequency
1-10	22
11-20	13
>20	7
Total	42

Based on education background, of the 42 respondents, 11 respondents or 24.53 percent have level of elementary school, 4 respondents or 9.43 percent have level of a junior high school, 21 respondents or 52.83 percent have level of high school education or equivalent and 6 respondents or 13.21 percent have level of Bachelor Degree of education. For more details, it can be seen in table 4.4 below.

Table 4.4. Respondent Characteristic based on Education background

Period	Frequency
Elementary School	11
Junior High School	4
High School	21
Bachelor Degree	6
Total	42

4.2. Descriptive Statistics

Table 4.5. reveals that mean value of willingness to pay SME taxes (wtp) is 3.9246. It shows that the most respondents answer point 4 (agree) for each question related to willingness to pay SME taxes. The minimum value of tax compliance is 3. It means there are some respondents answering neutral, while the maximum value is 5. It means there are some respondents answering strongly agree for each question related to willingness to pay SME taxes. Moreover, mean value of tax socialization is 4.750 and it tend to 5 (strongly agree). The mean value of tax knowledge is 4.2183, and the mean value of managerial benefit is 4.0873, thus both of mean shows that the most respondents answer point 4 (agree) for each question related to managerial benefit.

Table 4.5. Descriptive statistics

	N	Minimum	Maximum	Mean		Std. Deviation
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic
wtp	42	3.00	5.00	3.9246	.02676	.17345
ts	42	3.00	5.00	4.7500	.05455	.35355
tk	42	3.00	5.00	4.2183	.09237	.59865
mb	42	3.00	5.00	4.0873	.07626	.49419
Valid N (listwise)	42					

4.3. Regression Analysis

Testing the effect of independent variables (tax knowledge, managerial benefit, taxsocialization) on the dependent variables (willingness to pay SME taxes) in this research used multiple regression analysis. Based on regression result, it can be summarized as shown in table 4.6.below**:**

Table 4.6. Regression Result

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig
	B	Std. Error	Beta		
(Constant)	9.152	2.911		3.144	.003

ts	.462	.097	.550	4.775	.000
tk	.172	.057	.519	3.001	.005
mb	.190	.067	.475	2.851	.007

From the table of the multiple regression test results, can be formed regression equation as follows:

$$Y = 9.152 + 0.172X_1 + 0.190\ X_2 + 0.462\ \ X_3 + 2.911$$

Based on statistical regression equation, it can be described as follows: Constanta value of 9.152 means that the willingness to pay SME taxes would be worth if the tax knowledge, managerial benefit, and tax socialization was constant. Tax knowledge coefficient (X_1) is 0.172. It means the tax knowledge has positive effect on the willingness to pay SME taxes. If the value of the regression coefficient of the other two variables retains (no change) then the variables change tax knowledge of 1% will lead to increase willingness to pay SME taxes by 0.172. Managerial benefit coefficient (X_2) is 0.190. It means that managerial benefit has positive effect on the willingness to pay SME taxes. If the value of the regression coefficient of the other two variables retains (no change) then the variables change managerial benefit of 1% may lead to increase willingness to pay SME taxes by 0.190. Tax socialization coefficient (X_3) is 0.462. It means that the socialization has positive effect on the willingness to pay SME taxes. If the value of the regression coefficient of the other two variables retains (no change) then the variables change tax socialization of 1% will lead to increase willingness to pay SME taxes by 0.462

Table 4.8. Coefficient determination

Model	R	R Square	Adjusted R Square	F	Sig.
1	.748[a]	.559	.524	16.053	.000

Based on Table 4.7, the independent variables were observed to explain 52.4% of the variance in the Willingness to pay SME tax (Adjusted R Square = .524). Furthermore, based on table 4.6, among the independent, tax socialization (Beta =-.462, Sig.<.001) was observed to be a better determinant of the Willingness to pay SME taxes than the tax knowledge (Beta .172, Sig.<.005) or managerial benefit (Beta .190, Sig<005).

4.4. Discussion

The first hypothesis test results (H1) shows a positive coefficient, indicates the direction with a t value of 3.001, is greater than t table with significant value of 0.005 thus it was shown that at $\alpha = 5$ % tax knowledge has a significant positive effect on the willingness to pay SME taxes. An essential factor influencing tax compliance is the knowledge of taxation. Tax law is multipart due to high intensities of abstraction and technical terms (McKerchar, 2001). Empirical evidence displays that poor knowledge on the tax system raises disbelief (Niemirowski, Wearing, Baldwin, Leonard & Mobbs, 2002). People not only have difficulties to understand tax law, they also show poor knowledge about tax rates and basic concepts of taxation. The results of this research showed significant positive direction. This means that the higher the tax knowledge, the higher the willingness of taxpayers to pay SME taxes. This result also support the reseach conducted by (Hardiningsih & Yulianawati, 2011), Nugroho (2012), and also research conducted by Widayanti and Nurlis (2010) they suggest that understanding and knowledge of taxes have a significant effect on the willingness to pay SME taxes.

The second hypothesis test results (H2) shows a positive coefficient, indicates the direction with a t value of 2.851, is greater than t table with significant value of 0.007 thus it was shown that at $\alpha = 5\ \%$ managerial benefit has a significant positive effect on the willingness to pay SME taxes. Managerial benefits are the benefits that may rise due to a condition in relations of tax regulation to retain records, such as better recordkeeping, the usage of technology, enriched knowledge of the financial activities of the business in specific in the form of increased knowledge of their complex accounting information systems and improved business or managerial decisions (Smulders et al., 2012). Hence, this result supports the previous research on managerial benefit conducted by Lignier (2009) and Rametse (2010).

The third hypothesis test results (H3) shows a positive coefficient, indicates the direction with a t value of 4.775, is greater than t table with significant value of 0.000 thus it was shown that at $\alpha = 5\ \%$ tax socialization has a significant positive effect on the willingness to pay SME taxes. Tax socialization have an important role in efforts to improve tax compliance. Through intensive tax socialization could increase taxpayer understanding on all matters relating to taxation, including tax function, regulation, mechanisms, and sanctions that will be earned by the taxpayer if it does not meet their tax obligations. This result supports previous research on tax socialization conducted by Adiyati (2009), Restiani (2011), Setianto (2010).

4.5. Conclusion and Recommendation

The major outcome of this research tax knowledge, managerial benefit and tax socialization have a positive significant influence on willingness to pay taxes. The most significant influence was tax socialization variable with significant <0.01. This result shows that beside tax knowledge and managerial benefit, tax socialization has a very important role to increase the willingness to pay SME taxes. This result is in-line with the real condition that only few businesses know the rules. In fact the government does not disseminate the SME tax by 1% in extended to the businesses thus the majority of SMEs do not understand the tax shelter in Presidential Decree (Decree) No. 46/2013 and it was because of the lack of tax socialization.

In addition, there are many obstacles in the implementation of the regulation in example collection and data collection SMEs taxpayer is not easy, especially for businesses with turnover below 4 billion dollars per year. Thus, the government should intensify dissemination SME tax, primarily related to the administration of the recording, like what kind of books and records what is needed.

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An Interactive Effect of Human Capital Variables and Economic Growth in Nigeria

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Abstract: The study examines the interactive effects of the relationship between human capital investment components and economic growth in Nigeria for the period of 1986 – 2014. Although, various studies have focused on the relationship between human capital and economic growth all over the world but there is still a missing gap on the joint influence of human capital investment components on economic growth particularly in Nigeria. The study employs secondary annual data on education expenditure; health expenditure; real gross domestic product and gross capital formation obtain from the Central Bank Statistical bulletin, 2014 and analyze using Fully Modified Ordinary Least Squares (FMOLS) technique. The results of the study show that there is positive and significant relationship between the interactive effects of human capital components and growth in Nigeria. The study educates the government and policy makers on the importance of policy mix in terms of how human capital development enhances growth in Nigeria than embarking on the use of one policy instrument. The paper therefore contributes to knowledge by providing information on the interactive effects of education and health on growth in Nigeria.

Keywords: Human Capital; Growth; Interactive Effect; Fully Modified Ordinary Least Squares (OLS)

JEL Classification: H51; I22; O40

1. Introduction

Over the years, investments in education and health services as a way of enhancing human capital development has been one of the cogent factors that determining the pace of growth in developing countries and in particular Nigeria. Therefore, the roles play by human capital development has been debated extensively in the theoretical and empirical literature (Solow, 1956; Barro, 1991). Thus, the availability of education and health services to people is one of the major ways of improving the quality of human resources. It provides an economy with healthy

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trained human resources required for economic growth and development (Bloom & Canning, 2003). It is one of the key determinants of economic performance both at the micro and macro levels and an uninterrupted component of human well-being that increases the individual's capabilities (Bloom & Canning, 2003).

In the literature, studies have commented on the contribution of human capital to economic growth. In the theoretical literature, human capital in terms of investments in education and health services has been claimed as a major contributor to growth (Solow, 1956; Barro, 1991; 1997; Mankiw, Romer & Weil, 1992). Likewise, studies have enormously assessed the contributions of education and health expenditure in the empirical literature. However, these studies have divergent opinions. In Nigeria, studies like Ojo and Oshikoya (1995), Garba (2002), Adamu (2003), Dauda (2010) and Mba, Mba, Ogbuabor and Ikpegbu (2013) concluded that expenditure on education and health as measure of human capital positively influenced growth. Meanwhile, it has been argued that government expenditure on health and primary education enrollments has negative influence on growth (Lawanson, 2009; Jaiyeoba, 2015). The divergence opinion on the relationship between human capital investment and economic growth has made the documented literature inconclusive.

More so, these studies either theoretical or empirical have also left unresolved the interactive effect of the relationship among public expenditure on education, health and growth in Nigeria. Yet, the empirical literature has unable to identify the robust mechanisms through which education and health contribute to economic growth. The thrust of this study therefore is to examine the interactive effect of the relationship between education and health as measures of human capital and economic growth in Nigeria between 1986 and 2014. This enables the economists, scholars, policy makers and government to distinguish between individual effect and interactive effect of the relationship between human capital measures and growth in Nigeria. The study contributes to existing literature by modeling the interactive effect using endogenous growth model.

The rest of this paper is divided into four sections. Section two contains the review of literature while the methodology is presented in section three; section four is the empirical result while section five is devoted to conclusion and recommendations.

2. Literature Review

Human capital refers to the stock of competencies, skills, knowledge and personalities attribute embodied in individuals which facilitate their ability for the creation of personal, economic and social value (OECD, 2001), labour is one of the factors of production and can also be referred to as workforce.

Ojo and Oshikoya (1995) examined the determinants of long-term growth in selected African countries using the framework of endogenous growth model between 1971 and 1991. The study found human capital as the most relative important factor influencing long-term growth in African countries. Similarly, Loening (2005) evaluated the impact of human capital on economic growth using error correction mechanisms for the periods of 1951 to 2002 and found that better-educated labour having a positive and significant impact on economic growth in Guatemala. Adamu (2003) determined the impact of human capital formation on economic growth in Nigeria between 1970 and 2000 using cointegration and error correction mechanisms. The study found that investment in human capital in form of education and training lead to economic growth.

Gyimah-Brempong, Paddison and Mitiku (2006) investigated the effect of higher education human capital on economic growth in African countries using dynamic panel data with a modified neoclassical growth equation. They found education has positive and significant effect on growth in African countries and claimed that growth elasticity of higher education human capital is twice as large as the growth impact of physical capital investment. Nabil, Simon and Yu (2007) examined the dynamic effects of public investment in human capital in the Canadian context of population ageing using a computable overlapping-generations model (OLG). The study found a significant effect of a tax-financed increase in public spending on education had a crowding-out effect in the short run while higher education contributed immensely to human capital accumulation in the long run and this also had negative effects of population ageing.

Lawanson (2009) examined the role of education and health in human capital investment and economic growth in Nigeria using ordinary least squares technique and found that human capital enhances economic growth in Nigeria while government expenditure on health and primary education enrollment had negative effects on growth. Dauda (2010) investigated the relationship between human capital formation and economic growth in Nigeria used the endogenous growth model. The study used employed enrolment in the different levels of education, primary, secondary and tertiary as proxies for human capital and found long-run positive relationship between human capital formation and economic growth in Nigeria with a feedback effects.

Amassoma and Nwosa (2011) studied the causal nexus between human capital Investment and economic growth in Nigeria for sustainable development in Africa at large between 1970 and 2009 using a Vector Error Correction (VEC) and Pairwise granger causality methodologies. The findings of the Vector Autoregression (VAR) model and pairwise estimate reveal no causality between human capital development and economic growth. Also, the study identified that labour mismatch is an issue that government needs to reckon with in order to accelerate and sustain economic growth. Oluwatobi and Ogunrinola (2011) examined the relationship between human capital development and economic growth in Nigeria using augmented Solow model and found that there exists a positive relationship between government recurrent expenditure on human capital development and the level of real output, while capital expenditure is negatively related to the level of real output.

Adelakun (2011) conducted a study on human capital development and economic growth using OLS technique and found that there was a positive relationship between government expenditure on education and health as well as pattern of enrolment in primary, secondary, and tertiary institutions in enhancing economic growth in the long run. Adawo (2011) examined the contributions of primary education, secondary education and tertiary education to economic growth in Nigeria using an econometric model and found that health expenditure contributed to growth while secondary school input and tertiary institutions dampen growth.

Isola and Alani (2012) examined the contribution of different measures of human capital development to economic growth in Nigeria. The study found that though little commitment had been accorded health compared to education, empirical analysis showed that both education and health components of human capital development are crucial to economic growth in Nigeria. Adelowokan (2012) examined the effect of education and health expenditures on economic growth in Nigeria between 1970 and 2010 using a static regression model. He also established the long-relationship between human capital spending and economic growth using the Engle-Granger two-step cointegration procedure. The study found that public investment and public consumption (in education and health) exerted positive influence on economic growth, while, private investment exerted negative effect on economic growth in Nigeria. Similarly, the study showed that there was long-run relationship between economic growth and expenditure on education and health in Nigeria.

Akbari, Moayedfar, and Jouzaryan, (2012) investigated the effect of human capital on the economic growth of Iran in the long run and the short run using the auto-regressive distribution lag model. The study showed that there was positive and significant effect of human capital on the economic growth of Iran. Onyeagu and Okeiyika (2013) investigated the interaction between foreign direct investment and human capital on growth in Nigeria and tried to ascertain the long run sustainability of Foreign Direct Investment (FDI) induced growth process using error correction mechanism. They found that FDI in Nigeria, had a negatively significant relationship to growth in the long run, meaning that the contribution of FDI in Nigeria is small and human capital had negative significant effects on growth in the long-run and claimed that this was due to shortage of skilled labour in the country.

Linda (2013) investigated the relationship between human capital development and economic growth using simple production function to estimate the human capital impact on labour productivity and found that female human capital has positive impact on labour productivity during the period of study. Eric (2013) focused on human capital as a driver of economic growth for developing countries. He argued that this has led to undue attention on school attainment. Then, he noticed that the attention that has been shifted to issues of school quality in developing countries have been much less successful in closing the gaps with developed countries. The study concluded that without improving school quality, developing countries will find it difficult to improve their long run economic performance.

Mba, Mba, Ogbuabor and Ikpegbu (2013) evaluated the relevance of human capital development on Nigerian economic growth using Ordinary Least Squares technique. They found a strong positive relationship between human capital development and economic growth using primary school enrolment, public expenditure on education and health, life expectancy and stock of physical capital to proxy human capital. Mehrara and Musai (2013) investigated the causal relationship between education and GDP in developing countries by using panel unit root tests and panel cointegration analysis for the period 1970-2010. The study showed a strong causality from investment and economic growth to education in these countries. Yet, education does not have any significant effects on GDP and investment in the short- and long-run. Ogujiuba (2013) examined the relationship between economic growth and human capital development and found that investment in human capital in the form of education and capacity building at the primary and secondary levels impact significantly on economic growth, while capital expenditure on education was insignificant to the growth process.

Eigbiremolen and Anaduaka (2014) employed the augmented Solow human-capital-growth model to investigate the impact of human capital development on national output using quarterly time- series data from 1999-2012. The study found that human capital development, in line with theory, exhibited significant positive impact on output level. This implied that human capital development is indispensable in the achievement of sustainable economic growth in Nigeria, as there is an increase in economic performance for every increase in human capital development. Lastly, Jaiyeoba (2015) empirically investigated the relationship between investment in education and health in Nigeria, using time series data from 1982 to 2011 using trend analysis, the Johansen cointegration and ordinary least square technique. Empirical findings however indicated that there is a long-run relationship between government expenditure on education, health and economic growth.

In summary, evidence from the literature showed that education and health are crucial for economic growth. However, studies have only examined the individual effect of education and health components of human capital while the issue of their interactive effects on economic growth has not been resolved. This study intends to fill this vacuum.

3. Methodology

In order to examine the interactive effect betweenhuman capital variables and economic growth in Nigeria, the study employed endogenous growth model and adapted the model equation formulated by Mankiw et al (1992) in line with augmented neoclassical model. The Cobb-Douglas production function of Mankiw et al (1992) model has been written in the following form:

$$Y = K^{\alpha} H^{\beta} (AL)^{1-\alpha-\beta} \qquad 1$$

Where Y represents aggregate output, K is the physical capital, H is human capital and A is a technical efficiency index and L is labour. L and A grow at constant rates and has exogenous rates *n* and *g*, respectively. The two variables are also prone to decreasing returns to scale, that is $\alpha + \beta < 1$. Transforming equation (1) and end up with an equation on income per worker as follows:

$$\ln\frac{Y}{L} = \ln A + gt - \frac{\alpha+\beta}{1-\alpha-\beta}\ln(n+g+\delta) + \frac{\alpha}{1-\alpha-\beta}\ln(s_k) + \frac{\beta}{1-\alpha-\beta}\ln(s_h) \qquad 2$$

Where s_k :the ratio of investment to product, s_h :human capital investment, *n*, *g* and δ: the growth rate of labour, technology and depreciation rate of capital respectively and *t*: time.

Let $\frac{Y}{L} = y$, $gt - \frac{\alpha+\beta}{1-\alpha-\beta} = 0$, $n + g + \delta = 0$ (this implies that the growth rate of labour, technology and depreciation rate of capital are constant over the period of study), $\frac{\alpha}{1-\alpha-\beta} = a_1$, $\frac{\beta}{1-\alpha-\beta} = a_2$ and $\ln A = a_0$. Substituting these into equation (2), we have:

$$\ln y = a_0 + a_1 \ln s_k + a_2 \ln s_h \qquad 3$$

From equation (3), decompose human capital investment into education (ED) and health (HE), it becomes:

$$\ln y = a_0 + a_1 \ln ph + b_1 \ln ED + b_2 \ln HE \qquad 4$$

Where $s_k = ph$ is the physical capital. Also, in order to capture the interactive effect of human capital components, equation (4) becomes:

$$\ln rgdp = a_0 + a_1 \ln ph + b_1 \ln ED + b_2 \ln HE + b_3 \ln(ED * HE) \qquad 5$$

Specifying equation (5) in econometric model, we have:

$$\ln rgdp = a_0 + a_1 \ln ph + b_1 \ln ED + b_2 \ln HE + b_3 \ln(ED * HE) + \varepsilon \quad 6$$

Equation (6) is the estimated econometric model that captures the interactive effect of the relationship between human capital components and growth in Nigeria.

Education and health are proxied using government expenditure on education and health respectively, the physical capital is proxied with total government capital formation, while the real gross domestic product (*rgdp*) is the proxy for economic growth. Data on these variables were sourced from Central Bank Statistical bulletin, 2014. The data were analyzed using appropriate econometric techniques.

4. Empirical Analysis

4.1. Pre-Estimation Test

4.1.1. Correlation Matrix Analysis

In the empirical literature, studies have shownthat testing of the correlation among the variables of estimates would make the researchers to detect whether the variables have high multicollinearity among themselves. As a result, the parameter estimates could be contradictory with what would be expected, because of the unpredictable effect of multicollinearity (Agung, 2009; Hamsal, 2006). However, Iyoha (2004) argued that multicollinearity among variables occurred when the result of the correlation coefficient is above 0.95. In line with this explanation, we conducted a correlation matrix among the variables used in this study and detected that there was strong correlation between ED*HEi.e. government expenditure on education and health(r= 0.98). In order to avoid multicollinearity among the independent variables, we then dropped government expenditure on education in our analysis as shown in the result of the fully modified OLS. The results of the correlation among other variables were reasonable as presented in table 1 below.

Table 1. Correlation Matrix

	RGDP	ED*HE	ED	HE	PH
RGDP	1				
ED*HE	0.8966	1			
ED	0. 4095	0.9848	1		
HE	0.9195	0.9047	0.9126	1	
PH	0.9248	0.8306	0.9216	0.9403	1

Source: Author, 2015

4.1.2. Time series Properties

To avoid spurious results the study Augmented Dickey Fuller Test to test for the unit root problem in the variables. The result of the stationarity test showed that all the variables were stationary at first difference using five percent significant level as shown in table 2 below. Having established that the variables were stationary at first difference, we tested whether the said variables have long run co-movement using Johansen cointegration test.

Table 2. Unit-Root Test Result by Augmented Dickey Fuller Method

Variables	Level	First Difference	Order of Integration
Log(ED)	0.4015	-6.5989	I(1)
Log(HE)	0.6225	-8.3136	I(1)
Log(RGDP)	6.0190	-2.3773	I(1)
Log(PH)	1.1520	-30794	I(1)
Log(ED*HE)	0.7341	-7.3954	I(1)

Source: Author, 2015

The result of the cointegration test showed that there were three cointegrating vectors based on the Eigen values and Trace statistics since the hypotheses of no cointegration were rejected at 5% level for both tests using Mackinnon-Haug-Michelis (1999) p-values as shown in table 3.

Table 3. Johansen Cointegration Result (Long-Run Co-Movement Result)

Rank	***Trace Statistic***	***0.05 Critical Value***	***Max-Eigen Statistic***	***0.05 Critical Value***
R=0	214.18	69.82	94.75	33.88
R ≤1	119.43	47.86	81.06	27.58
R ≤ 2	38.37	29.80	26.14	21.13
R ≤ 3	12.23	15.49	10.21	14.26
R ≤ 4	2.02	3.84	2.02	3.84

Source: Author, 2015

After investigating the long run relationship among the variables, we estimated the short run dynamics of the variables using Error Correction Mechanism (ECM). The ECM shows the speed of convergence towards equilibrium which must be negative and significant.

Table 4. Short-Run Estimated Result

Dependent Variable: RGDP				
Variable	***Coefficient***	***Std. Error***	***t-Statistic***	***Prob.***
ECM(-1)	-0.549777	0.266513	-2.062850	0.0497
Δ(ED*HE)	-0.063821	0.024462	-2.608974	0.0151
ΔED	77.59104	15.20085	5.104389	0.0000
ΔED(-1)	-82.46012	35.03001	-2.353985	0.0267
ΔHE	-103.3641	31.72338	-3.258293	0.0032
ΔPH	0.385818	1.221758	0.315790	0.7548
ΔRGDP(-1)	1.459307	0.365804	3.989316	0.0005
ΔHE(-1)	39.19674	23.16420	1.692125	0.1031
R-squared	0.987270	Durbin-Watson stat		2.167691

Adjusted R-squared	0.976506		

Source: Author, 2015

The result in table 4 showed that the variables would converge to long-run relationship after sixteen (16) years movement among the variables as shown by the negative and significant coefficient of error correction term (ECM).

4.2. Interactive Relationship between Human Capital Components and Economic Growth in Nigeria

Having established the long-run co-movement among the variables, we employed fully modified Ordinary Least Squares(FMOLS) technique to establish the long-run relationship among the variables as shown in table 5 below.

Table 5. Fully Modified Least Squares (FMOLS) Result

Dependent Variable: ΔLOG(RGDP)				
Variable	***Coefficient***	***Std. Error***	***t-Statistic***	***Prob.***
ΔLOG(ED*HE)	0.468042	0.133771	3.498829	0.0015
ΔLOG(PH)	0.752995	0.091857	8.197465	0.0000
ΔLOG(HE)	-0.632780	0.272861	-2.319058	0.0276
C	2.680502	0.418178	6.409949	0.0000
R-squared	0.929184	Mean dependent var		7.693312
Adjusted R-squared	0.908065	S.D. dependent var		2.318477
S.E. of regression	0.253284	Sum squared resid		1.860428
Long-run variance	0.064034			

Source: Author, 2015

The estimated result above showed that the explanatory variables explained approximately 91 percent of the total variations in the growth of the Nigerian economy. This result showed that the model has high goodness of fit. The long-run variance was less than unit which indicated that the estimators of the model had minimum variance and hence, efficient, sufficient and best linear and unbiased.

The coefficient of the health expenditure was negatively signed and statistically significant at 5 percent level. The negative sign indicated that a unit percent increase in health expenditure would lead to 0.63 percent decrease in growth of the country. This result was not in conformity with the theoretical preposition but was in line with the work of Lawanson (2009) and Jaiyeoba (2015). A plausible explanation for this is that expenditure on health alone in Nigeria does not have the required positive multiplier effect.

The coefficient of the interactive variable was positively signed and statistically significant at 5 percent level. The positive relationship exhibited by the interactive human capital variable showed that a percent increase in the combination of both education and health as a means of enhancing human capital would lead to approximately 0.47 percent increase in growth of the economy. This result was in conformity with theoretical propositions that increase in human capital investment would lead to increase in economic growth (Solow, 1956; Barro, 1997; and Mankiw, Romer & Weil, 1992) and empirical findings also supported the theoretical underpinning (Ojo & Oshikoya, 1995; Garba, 2002; Adamu, 2003; Dauda, 2010; Mba *et al*, 2013; Eigbiremolen & Anaduaka, 2014). The implication of this result is that government should invest in both education and health simultaneouslyin Nigeria so that human capital investment can enhance growth as expected.

5. Conclusion and Recommendations

There are large records of studies which propose the imperative and positive effect of human capital on economic growth. The effect, however, differs significantly among various studies depending on the model, the data and the case country. Studies which are based on growth calculation methods result in less powerful effect of human capital on the output while cross-country studies in which Solow's adjusted method is used suggest a more powerful effect of human capital. Finally, empirical studies of endogenous growth imply the crucial effect of human capital on economic growth in different countries.

The results of this study which are based on the neoclassical model, also, confirm the positive and significant interactive effect of human capital components on the growth of Nigeria. According to the results of this study, the interactive effect of human capital affects long-run economic growth in Nigeria.

Based on the findings of this study, the following recommendations are made that government should increase allocation tothe education and health sectors in the country; government should also increase health care facilities in the country and motivate the health personnel with good remuneration to guarantee increased productivity in the sector and enhance the standard of education by motivating and retraining the teachers at all levels while increasing education infrastructural facilities.

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Identifying Determinants of Organizational Development as the Key Developers of Employee Soft Skill

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Abstract: The purpose of this article is to identify the determinants of organizational development as the key developers of employee soft skills. Various studies have been taken where determinants of organizational development defining soft skills in employees are discussed. However, the current study is different in Pakistani industry context as the link was missing about the determinants of organizational development which in synchronized way help in developing soft skills in employees of firm. This research uses explanatory approach; incorporating secondary data extracted under the light of existing school of thoughts paired with quantification through data collected from respondents in Pakistani corporate sector. Hypotheses are tested using structural equation model (SEM) technique. **Results** This research showed an affirmative link between determinants of organizational development and development of soft skills in employees. Finally, the study proposes enriching insights on few missing links that can be researched and triggered achieving maximized outcomes.

Keywords: HRD; Organizational Development; Behavioral Training & Development; Employee Performance

JEL Classification: O15

1. Introduction

A main strength for any organization to harmonize dynamic markets is organizational learning. An organization's ability to learn is a key strategic capability to compete in modern markets. This article is an effort to get deep rooted understanding of learning role to organization’s competitive edge by assessing how organizational learning, considered as vibrant capability forming firm’s tactical flexibility and aggressive strategy execution to finally polish consumer, fiscal, and marketplace related show (Santose, 2012). The current study aims at determining

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the impact of behavioral training and development synergized with human resource development and organizational learning in developing soft skills in employees. The authors have reviewed extensive literature which laid down the foundation for identifying the determinants of organizational development such as human resource development (HRD, organizational learning (OL) behavioral training and & development (BT & D).

The role of organizational learning (via exploratory learning and exploitative learning) in this process is analyzed during the whole scenario as well. There is a strong positive relation between human resource management (HRM) and employee performance management (Li et. al., 2012).

Employee performance management advocates aligning HRM practices in specific ways that make sure running and expected performances of employees will direct towards as a whole organizational learning (Den Hartog, Boselie & Paauwe 2004). We found evidence from previous literature that Organizational learning is supporting for new ventures to cater opportunity and boost efficiency through better organizational performance (Li et. al., 2012). We discussed more that connecting social capital theory with the organizational learning angle, we discussed not only the way OL affects the connection between managerial ties as main social capital and new ventures' opportunity capture, but also enlarge opportunity capture researches from entrepreneurs' endogenous traits to their exogenous relationships.

The main reason for undertaking this research study is that in Pakistani corporate Industry it has been evidenced that organizations invest a lot in recruitments and training employees with respect to hard skills i.e. those associated with the functional perspectives of their jobs. However, employees are lacking soft skills which can only be developed and enhanced if behavioral training and development becomes an integral part of organizational development strategy. Therefore, it is eminent to inspect the impact of all of the facets of organizational development so that an integrated OD may result in better employee performance.

Hence the current research aims to identify the determinants of organizational development and its impact on developing soft skills in employees.

The following research questions are central to this study:

1. How determinants of organizational development are associated with organizational development?

2. What is the influence of organizational development on developing soft skills in employees?

2. Theoretical Background

The past literature advocates that organizational learning is focal point for new findings to shape value and grab opportunity (Hsu & Pereira, 2008; Li et al., 2012; Short et al., 2010; Simon, 2011). In the previous literature added as well, exploratory learning and exploitative learning are viewed as the most important factors (March, 1991). These can readdress and fine tune in social capital (Zhao, 2011) and perk up firm presentation (Lumpkin, 2005).

Furthermore, these are viewed as synthesized forces which work for collective superior and are obviously beneficial for firm and attached institutions (Lin, Peng, Yang, & Sun, 2009) added (Yang, Lin, & Peng, 2011) connecting social capital theory with the organizational learning angle. We not only explain how organizational learning affects the association between managerial ties as important social capital and new ventures' opportunity capture, but also expand opportunity capture research from entrepreneurs' endogenous traits to their exogenous relationships. We can find evidence from previous literature which that organizational learning is mainly essential for resource management of new ventures in vibrant environments (Short et al., 2010; Sirmon et al., 2007).

The existing literature emphasizes that organizational learning is especially important for resource management of new ventures in dynamic environments (Short et al., 2010; Sirmon et al., 2007). Organizational learning types include exploratory learning and exploitative learning have different features (Lin et al., 2009; Yang et al., 2011). Exploratory learning means the learning of product and process development skills that are exclusively unique to running experiences of the firm. The focal words in exploratory learning actions are "search, variation, risk taking, experimentation, play, flexibility, discovery, and innovation" (March, 1991, p. 71).

Exploratory learning stress is on experimentation with new options, since it happens beside an exclusively different path through the processes of determined variation, planned experimentation, and play (Benner & Tushman, 2002; Gupta, Smith, & Shalley, 2006; Yang, Liu, Gao, & Li, 2012). Contrarily, exploitative learning means the learning from the knowledge and skills that are well-known with the firms' running actions. Exploitative learning endorse "refinement, choice, production, efficiency, selection, implementation, and execution," and it concentrate on "the refinement and extension of existing competencies, technologies, and paradigms exhibiting returns which are positive, proximate, and predictable" (March, 1991, p. 85).

The chief stress of exploitative learning is on organize, competence, and consistency (Auh & Menguc, 2005). First, we have to find out whether learning from experience cashed in diverse acquirement scenario is confined to affecting succeeding results of same scenario dealings. Second, we consider whether learning scenario in reaction to preceding gain and losses vary across attainment scenario, learning is diagnosed with regard to an unexploited organizational goal uneven in attainment completion of an openly announced transaction. Organizational learning theory propagate that experienced-based learning endorsed result via its effects on knowledge creation and convey, and by suggesting changes to organizational practices, strategies, and structures (Cyert & March 1963; Levitt & March, 1988).

Empirically, positive results due to added experience are one the major findings in organizational learning (Argote, 2012). As a result, scholars have advanced organizational learning theory in three major directions. Firstly they stressed on role of experience with extent to codification instead of accumulation of experiences (Hayward, 2002; Zollo, 2004). Secondly they diagnose the probabilities of events which moderate the mode in which experience affects learning (Haleblian, 1999) or aim firm operations (Brutton, 1994). Thirdly, scholars have aimed afar the conventional judgment of learning depending on the beneficiary monetary performance subsequent to explicit agreement.

Organizational learning can be explained as a procedure through which firms deduce inference from practice into practice into understanding or daily activities such that their understanding or succeeding actions modified methodically (Argote, 1999; Cyert & March, 1963). Experiential learning theory suggests that experience is the main reason of establishing routine. Routines are combined, recurring, and constant pathways of actions within organizations (Nelson, 1982). Routine developed through practice exercise by employees of an organization.

Beyond above discussed actions routine can also covers executive level decision making accompanying by administrative and operations actions to postulate organizational events (Finkelstein, 2002; Winter, 1987). Despite enormous research on organizational learning in mergers and acquisition we have least knowledge of it that how and what level of experimental learning we got from past failures. HRM mechanism must make sure low employee absenteeism, greater satisfaction, and commitment. These HRM recommendations have been focused in many of the main HRM employee performance models that have been offered, established and experienced in the literature over the past couple of decades (Paauwe, 2009). Paauwe and Richardson (1997) added that satisfaction of academic employees could harmonize connection among HRM practices, context and quality of task’s employee deliver.

Outcomes of the study propose that an inclusive loom to performance management evolves fine results provided there are strong linkages among elements of employee management otherwise troubles arises. The results are same with different studies that there exist connection among HRM processes and attitudes are correlated. It is found that where performance appraisals are less consistent, the appraisal reviews may have a bigger brunt on following job performance (Howell, 1986).

In addition, Cederblom (1982) advocates that appraising of old employees has little impact on their succeeding performance. Above discussed phenomenon could be different due to nature of job and industry analyzed (Dorfman et al., 1986). Effectiveness of review is valid if it is not done in long time. Additionally, Latham and Wexley (1994) stressed for sharing results of reviews more frequently if change in behavior of employees is needed. Seemingly, Augustine (1994) added more that this must be exercised on regular basis for sound results otherwise this exercise may fulfill documentary proceedings but worth less.

Managing employee performance in the multinational context necessitates examining differences in employee's cognitive processes. Investment in human capital is beneficial as suggested by many job related factors. Result oriented employees having proactive approach are valued. Organizational learning or Learning organization have been used interchangeably in many circumstances. While first one means the collaborative learning method of persons and second one is considered as the temperament and/or uniqueness of an organization that might sponsor a nonstop organizational learning process (Song, 2009).

Furthermore, HRD can participate in edifice organizational learning environment by cheering nonstop learning, discussion and investigation, group learning, and empowerment (Yang &Yang, 2004). HRD policies are essential to recruit, train, retain and polished employees for improvement of performance. The outcomes reveal that practices can be identified along intra organizational relationship, competence management, performance and stress management (Lim, 2011). Furthermore, HRD can add to build implanted systems, organization links, and structural headship. For instance, HRD can assist organizations put up an organizational environment of unwrap communication that facilitates individuals for feedback; listen to others' viewpoints, and support questioning and feedback.

Thus the extensive literature review sum up with the development of hypothesis given below:

H1: Human Resource Development (HRD) serves as a substantial determinant of organizational development

H2: Organizational Learning (OL) serves as a substantial determinant of organizational development

H3: Behavioral Training & Development (BT & D) serves as a substantial determinant of organizational development.

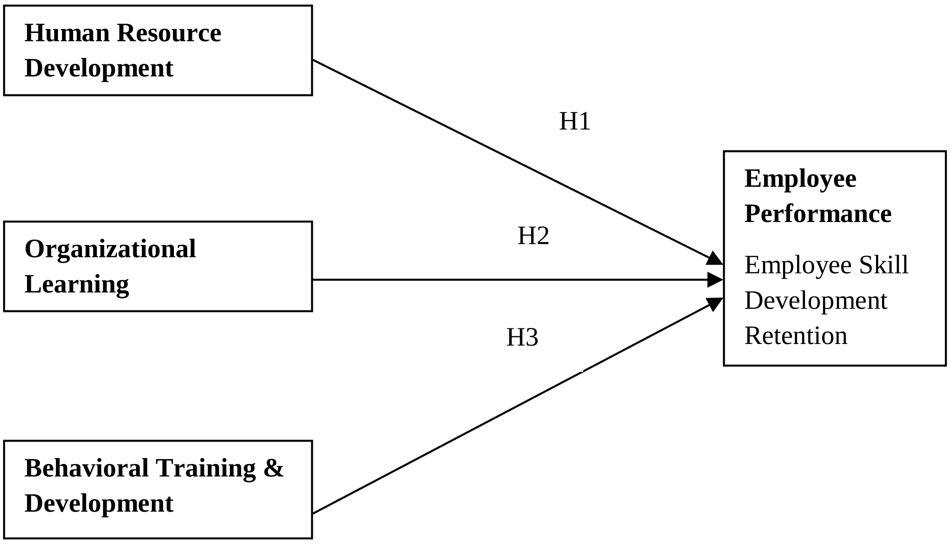

Figure 1. Theoretical Framework

3. Research Method

3.1. Sample

Target population for this research was managers and employees working in different service and industrial sectors organizations in Pakistan. Total 230 research questionnaires were distributed by research assistants, amongst all 189 questionnaires were filled and sent back. The special designed questionnaire asking about employee's soft skills sparked interest in respondents. That's why response rate was too significant.

3.2. Instrument and Measures

The research is conducted to determine the outcome of determinants of organizational development on developing soft skills. So there are total two variables in this research. Organizational develop as independent variable and development of soft skills as dependant variable. The instrument to analyze determinants of organizational development consists of 16 items and is inquired on 5-point Likert scale (1 for strongly agree and 5 for strongly disagree). The endogenous variable is development of soft skills in employees.

3.3. Procedure

Questionnaires were circulated to managers and employees working in different service and industrial sector organizations in Pakistan. Questionnaire has two parts. First was asking about respondents demographics. And the other part was related to exogenous and endogenous variables. Questionnaires were circulated as in first stage, the self-explanatory questionnaires were circulated by research assistant to respondents, and in second stage questionnaires were collected. A reminder call was also sent time to time to get high response.

4. Results and Discussions

The reply rate of 82% was witnessed as 230 questionnaires were distributed and 189 questionnaires were acknowledged back. Researcher did not find statistical disparity between personal and professional qualities of respondents. Which means outcomes can be generalized to bigger population.

Mean, standard deviation, and cronbach's of the data is presented in table 1. The outcomes of this research are strongly positive. The outcomes depict that employee performance has the largest mean and organizational learning has the lowest mean.

Table 1. Descriptive Statistics

Variables	Items	N	Mean	SD	Cronbach's Alpha
HRD	3	189	3.9298	1.65071	.839
Organizational Learning	2	189	3.7214	.92707	.614
Behavioral Training& D	2	189	3.8976	.89271	.788
Employee Performance	5	189	4.6786	2.19453	.842

Table 2 declares Pearson correlation analysis of identifying the determinants of OD as the key developers of employee's soft skills. Table 2 shows significant connection amid determinants of development soft skills in employees; it shows a bit lower value of affirmative prejudice than determinants of soft skills development. At the same time, Table 2 tells a key affirmative affiliation amid exogenous and endogenous variables. So, it ropes our hypothesis H1, which points out the optimistic correlation between the determinants of OD as the key developers of employees soft skills.

Table 3 tells regression weights of the examination. The charge of P ought to be less than 0.05 for approval of hypothesis. The charge of P for these results is fit lower than 0.05. Therefore, we acknowledge our proposition. Evidence of strong affirmative bond between determinants of OD and developing of soft skills in employees exist. The investigation has sound support from various authentic sources as quoted in strength in literature review segment

Table 2. Correlations

	HRD	OD	BT&D
IVs Pearson Correlation Sig. (2-tailed) N	1 189	1 189	1 189
EP Pearson Correlation Sig. (2-tailed) N	.877 .000 189	.787 .000 189	.678 .000 189

Table 3. Regression Weights: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
EP <--- HRD	.595	.052	7.496	***	Accept
EP <--- OD	.369	.057	6.664	***	Accept
EP <--- BTD	.465	.042	9.645	***	Accept

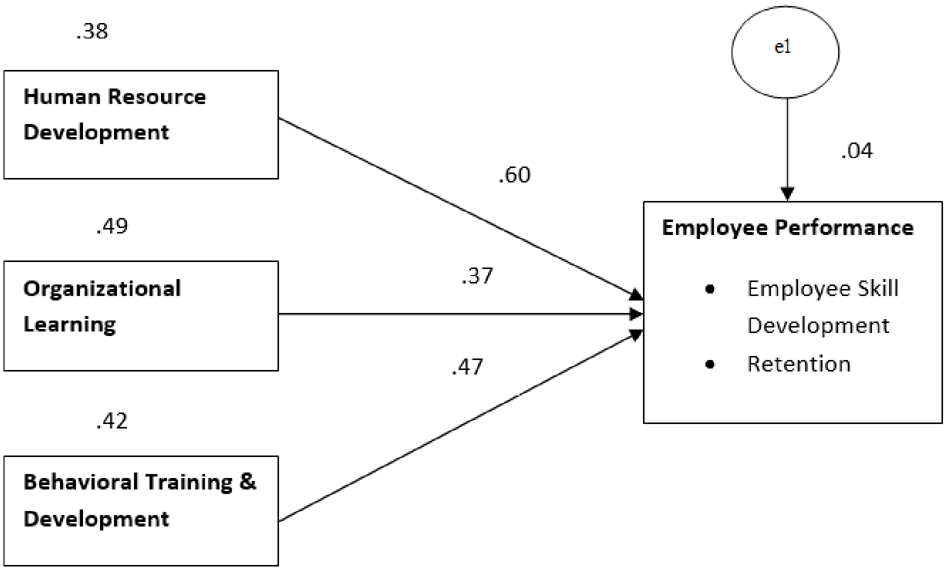

Figure 2. Structural equation mode

5. Conclusion

This research is conducted to indentify determinants of organizational development as a key developer of soft skills in employees. This is valuable study as it tested that how organizational development support developing soft skills in employees. The study is a unique as it investigated while identifying determinants of organizational development as developing soft skills in employees in Pakistani service and industrial sector. This study proved positive relationship between determinants of organizational development as a key developer of soft skills in employees. Projected model in this research is established by using numerous analysis and structural equation modeling technique (SEM). By deploying all determinants of organizational development entirely, user of this information shall be able to get closer towards an efficient use of recommendation of this research. The Research also established basis for researchers with constructive upcoming references.

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Navigating the Role of Business Incubators: A Review on the Current Literature on Business Incubation in South Africa

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Abstract: Business incubators (BIs) are a significant tool in promoting the development of entrepreneurial firms, technology-based growth firms and economic growth in South Africa. The study reviewed the current literature on business incubation in South Africa. BIs in South Africa emerged as a popular strategy in the 1990s and most of the current literature was established in the same period. However, the current literature is still limited. The aim of this paper is to provide an overview of existing knowledge on the role and effectiveness of business incubation in supporting the development of new small startup businesses. The quantitative and qualitative literature published by the academic and practitioner communities is reviewed. The searches indicated that incubation has encouraged many studies in South Africa. The studies can be categorised under the following themes: the role and contribution of incubators, success factors for business incubation, obstacles, and the relationship between incubators and entrepreneurship. The areas for further research are suggested. Two major areas that new research can explore focus on the creation of the model and self-sustainability of BIs.

Keywords: entrepreneurship, success factors, challenges for business incubators, entrepreneurial skills

JEL Classification: M13; O2; O31

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1. Introduction

Sithole and Rugimbana (2014) point out that the term incubators is used to explain an organization that develops and promotes an entrepreneurial idea from initiation and commercialization. Wanger (cited in Buys & Mbewana, 2007) point out that following the independence in 1994, business incubation in South Africa appeared in 1995 when the Small Business Development Corporation (SBDC) formed ‘hives of industry’. The hives played a crucial role in facilitating the needs required by small firms. However, hives were not business incubators (BIs) in the current practice and there was no incubation phase for a firm to move out of the hives (Buys & Mbewana, 2007). Business incubators can provide incubated firms with a conducive work environment and help emerging businesses to survive (Tilana, 2015; Kavhumbura, 2014). Thus, in South Africa incubators are viewed as having a significant impact on economic growth and development (Mothibi, 2014; Lose, 2016). By helping incubatees to create employment, BIs can be a significant tool to reduce poverty and inequalities in South Africa. Lose and Tengeh (2015) point out that in developing countries, there has been increasing interest in the study of business incubation as a significant economic and social phenomenon. Tengeh and Choto (2015) and Van der Zee (2007) share similar views that BIs play a critical role in the success of any organization. Business incubation continues to receive attention globally, including in South Africa. This study aims to review the current literature on BIs in South Africa and suggest areas for further study.

1.1. Problem Statement

In South Africa, limited research has been conducted on the performance of a business incubator in terms of internationally recognized standards (Cullen, Calitz & Chandler, 2014). Ndabeni (2008) concurs that in South Africa the incubation process is a recent phenomenon and is still evolving. Lose and Tengeh (2015) are of the view that the concept of business incubation is fairly recent in developing countries and still developing in South Africa. Overall, there is an important knowledge gap concerning business incubation in the country and in particular, little is known about the geography, organization and operations of BIs across the country (Masutha, 2014).

2. Objectives of the Study

This study aims at unpacking the current literature on BIs in South Africa. Furthermore, the study will provide direction for fruitful future research.

3. Literature Review

3.1. Definition of Business Incubation

The literature contains various definitions in an attempt to characterize BIs. Cullen, Calitz and Chandler (2014) and Chirambo (2014) define BIs as a business development tool that is used to grow entrepreneurial venture by providing a platform for enterprises to build their foundation. Along the same lines, Lose (2016) and Ndabeni (2008) refer to BIs as organizations that provide and facilitate a protected environment to start-up, and exiting businesses by providing a comprehensive range of shared services with the aim to minimize start-up failure. Hence, Masutha and Rogerson (2014) and Dubihlela and Van Schaikwyk (2014) point out that BIs are one of the strategic tools for helping entrepreneurs during their start-up phase. These authors also point out that in both developed and developing countries, incubation is viewed as a vehicle to reduce the high mortality of incubated business. Drawing from the foregoing definitions, BIs are mainly for the purpose of promoting and fostering the development of new and existing businesses in South Africa (Mothibi, 2014; Lose, Maziriri, Madinga, 2016). Masutha (2015) and Diedericks (2015) deduce that incubators provide small businesses with technical and business consultancy services and targeted infrastructural support services. Therefore, the performance of the incubator should be measured based on the number of incubatee graduates and jobs created.

3.2. Studies on business incubations in South Africa

To identify current business incubation related articles, engines for academic literature such as Internet searches were conducted through the use of a combination of key words such as business incubators, incubation, incubatees, entrepreneurship and South Africa. This yielded 41 papers, journal articles, theses and dissertations covering the period between 2006 and 2016. For each selected article, the researchers examined its literature and research opportunities. The searches indicated that BIs has encouraged many studies in South Africa. Thus, most of the studies could be categorized under the following themes: the role and contribution of incubators; success factors for business incubation; obstacles; and the relationship between incubators and entrepreneurship.

3.3 Provincial distribution of different institutional forms of business incubators in South Africa

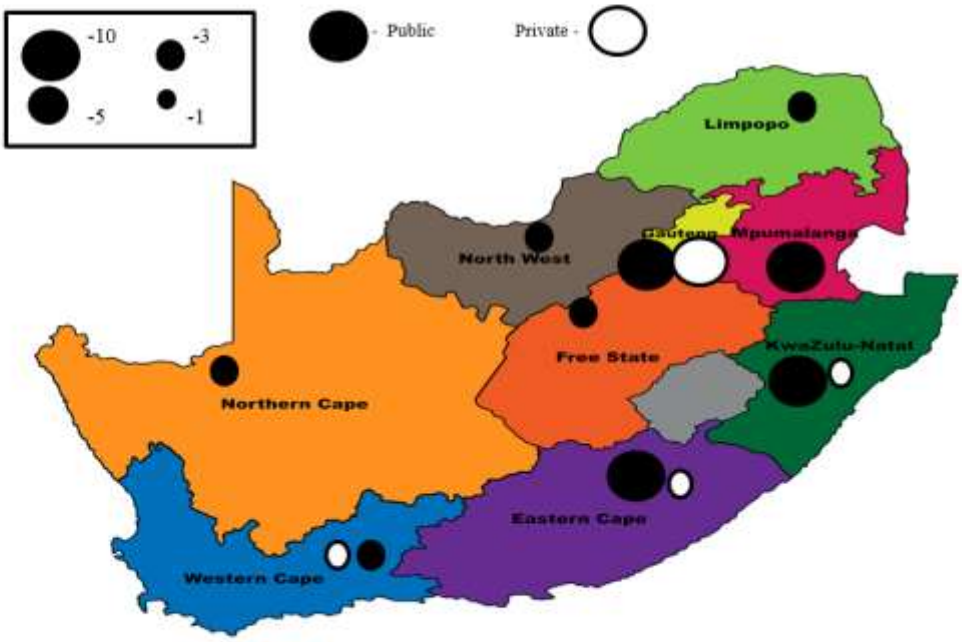

Figure 1. Map of South Africa showing provincial distribution of BIs

Source: Adapted from Masutha and Rogerson (2014)

Figure 1 shows the distribution of both public and private sector incubators on a provincial basis. It indicates the government's attempt to distribute such incubators across all provinces. The largest clusters of BIs are currently located in the provinces of Gauteng and KwaZulu-Natal, followed by Eastern Cape, Western Cape and Mpumalanga. Together, these five provinces account for 90.2 percent of all BIs. The provinces that are relatively sparse in respect of BIs are Limpopo, North West, Free State and Northern Cape.

3.4. The role and benefits of business incubators

According to Ndabeni (2008), Lesakova (2012), Masutha and Rogerson (2014), Lose & Tengeh (2015) and Choto (2015), the main role of BIs is to accelerate the successful development of enterprises, by providing various business support services and resources. In addition, BIs are being established in order to address the problem of entrepreneurial venture failure and helping to reduce failure rate (De Beer, 2012; Muyengwa, Dube, Battle & Masinga, 2014). Therefore, a business incubator is described as an organization that facilitates and provides a protected environment to new, early and exit stage businesses by providing support to small and medium-sized enterprises, equipping them with the necessary skills.

Chiromo, Muyengwa and Makuvaza (2014), note that networking experiences between business owners is imperative. Thus, businesses learn from each other and support each other professionally. Figure 2 summarizes the benefits of BIs, as identified by Ndabeni (2008).

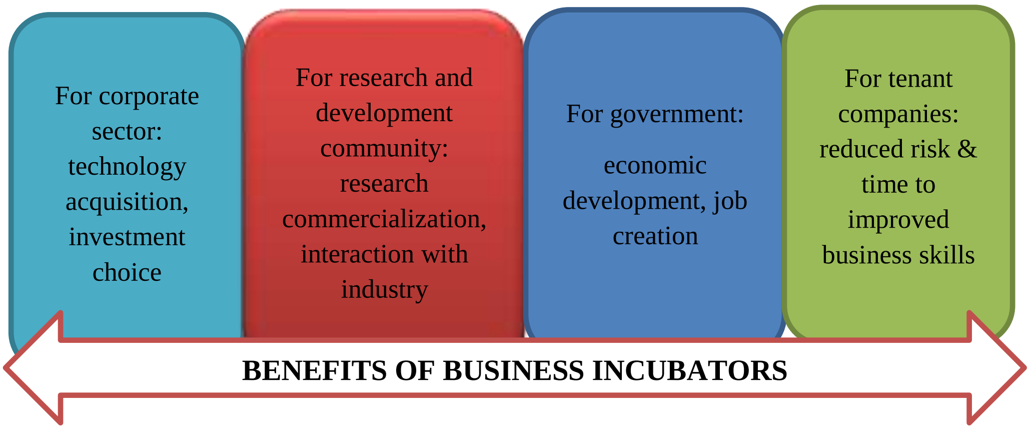

Figure 2. Benefits of business incubators

Source: Adapted from Ndabeni (2008)

Mostly government agencies, the private sector and higher learning institutions establish BIs in South Africa. The majority of BIs focus on the high technology incubatees (Buys & Mbewana, 2007). Thus, the development of BIs demonstrate "that the right kind of business environment is increasingly being acknowledged as an important factor contributing to the success of SMMEs and the local economy" (Dubihlela & Van Schaikwyk, 2014:264). Therefore, both incubators and incubatees have the best chance to improve and create more jobs opportunities in South Africa.

3.5. Factors contributing to the success of business incubators

BIs are essentially organizations that help to increase survival rates of innovative start-up companies and support the entrepreneurial ventures. However, like business incubatees, incubators also face a number of challenges (Lose & Tengeh, 2015; Tengeh & Choto, 2015). Thus, many researchers have scrutinized the factors that contribute to the success of business incubation. Buys and Mbewana (2007) and Ndabeni (2008) argue that the factors that contribute to the success of business incubation are as shown in Figure 3.

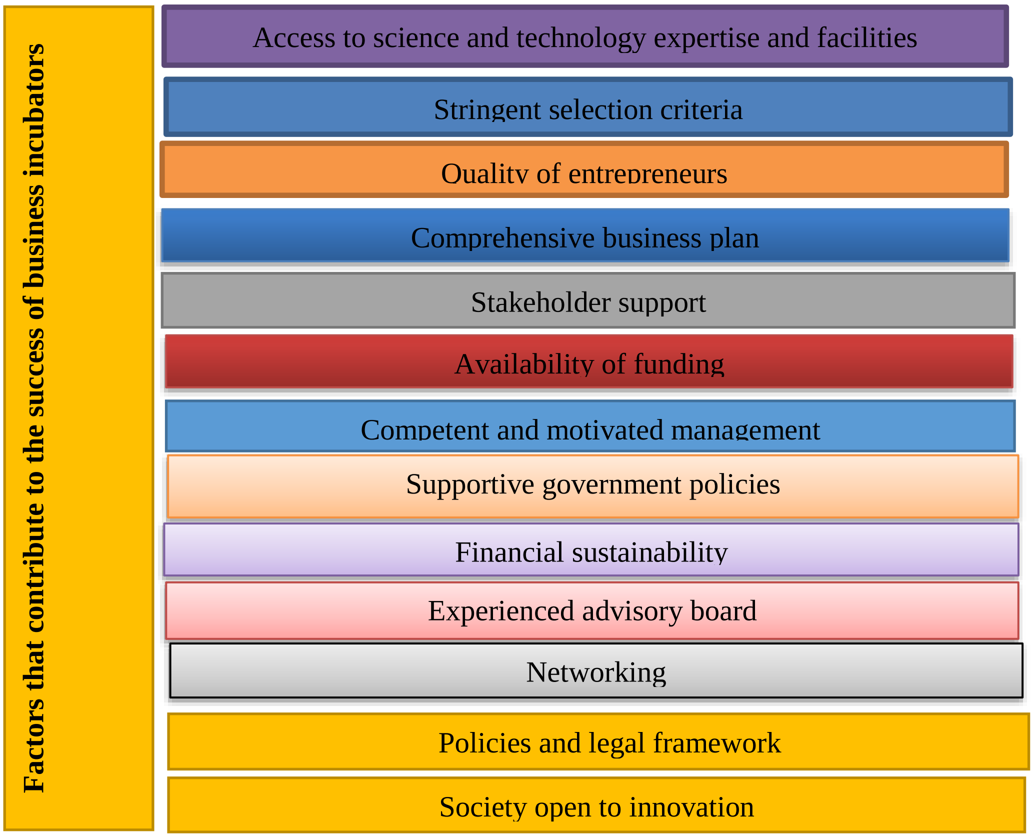

Figure 3. Factors that contribute to the success of business incubation

Source: Adapted from Buys and Mbewana (2007) as well as Ndabeni (2008)

According to Buys and Mbewana (2007) and Ndabeni (2008), the identified factors in Figure 3 are the most important influences on success of incubation in South Africa. If an incubator has fewer than 13 of these factors it means that they lack too many elements to be considered successful. The researchers, therefore, identify that these factors all have positive interactions with the success of the business incubator.

3.6. Challenges of Business Incubators in South Africa

BIs, like any type of business, face challenges in servicing incubatees in order to carry out a rational assessment of why incubation programs are not completed. Choto (2015) and Lose (2016) suggest that there is a need to look at it from all perspectives, which is from both the BIs and incubatees side.

Table 1.1 summaries the challenges that BIs face in running their business ventures, as identified by Lose and Tengeh (2015) and Choto (2015) in the current literature.

Table 1.1 The set of 4 potential challenges for business incubators

1.	Access to advanced technology-based prototype
2.	Lack of funding and sponsorship
3.	Geographic area
4.	Lack of entrepreneurial skills.

Source: Adapted from Lose and Tengeh (2015) as well as Choto (2015)

3.6.1. Access to advanced technology-based prototype

According to Lose (2016) and Lose & Tengeh (2015), BIs in South Africa have limited access to advanced technology-based facilities (prototype). Thus, incubatees that promote innovation and technological products will not complete the incubation programme. In addition, a study conducted by Ramluckan (2010) revealed that the STP incubators performs poorly in terms of technology transfer.

3.6.2. Lack of funding and sponsorship

BIs also face a challenge of obtaining funds and sponsorships shortages when servicing incubatees, as most BIs are not self-sufficient. The main funders for business incubators in South Africa are the Incubation Support Programme (ISP) within the Department of Trade and Industry (DTI) and SEDA Technology Programme (STP) (Lose & Tengeh, 2015). Hence, there is still a need to mobilize the private sector to fund BIs.

3.6.3. Geographic area

According to Buys and Mbewana (2007), a good location for incubators allows incubatees to access the geographic area to obtain needed services such as the supporting infrastructure. Hence, it is advisable for BIs to be located close to incubatees to able to reach some of the entrepreneurs in need of their services (Masutha, 2015).

3.6.4. Lack of entrepreneurial skills

Some BIs in developing still experiencing a lack of managerial and entrepreneurial skills to contribute fully in the SMEs success (Lalkaka, 2002; Akcomak, 2009). The selection criteria and attraction of adequately skilled management is a critical factor to the success of every business incubator (Cullen, Calitz & Chandler, 2014). Thus, BIs face the challenge of equipping incubatees because of lack of commitment from the incubation management. Ramluckan (2010) also reveals that incubators require management that is proactive, with good business skills.

3.7. The relationship between incubators and entrepreneurship

Bergek and Norman (2008) and Marimuthu and Lakha (2015) describe a business incubator as a guidance to newly established organizations, the main purpose of which is hatching to minimize SMEs failure rate and unemployment. Hence, the same hatching idea is applied to the incubating of small businesses to speed up new-venture creation and increase their chances of survival. Lalkaka and Shaffer (1999) and Masutha & Rogerson (2014) identify the objective of incubators as helping to promote venture creation and developing the economy by nurturing incubatees through providing numerous services. Ntlamelle (2015) mention that BIs provide a comprehensive range of shared services and enterprise-development assistance. De Beer (2012) and Choto (2015) conclude that in order for incubators to contribute fully towards entrepreneurship, it is essential to establish the association between the two and the way they fit together. Based on the above-reviewed literature, the conceptual model in Figure 4 was developed.

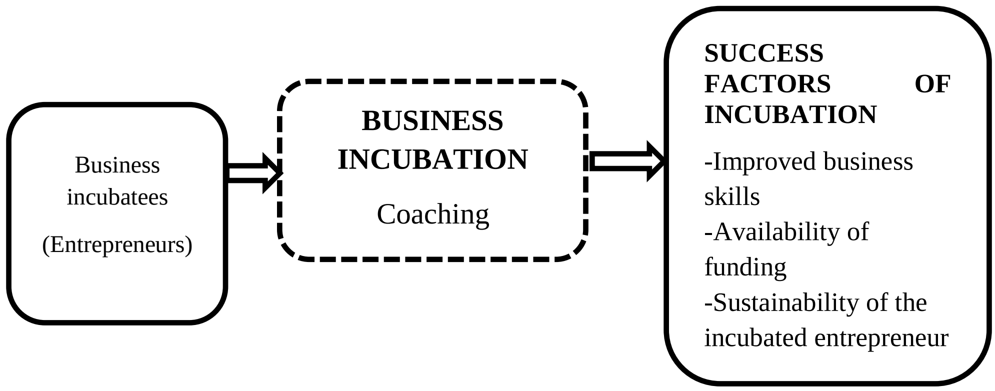

Figure 4. Conceptual model

Source: Authors own compilation

3.8. Recent empirical studies done in South Africa on business incubation

In South Africa, recent research has been examined on business incubation in various contexts by focusing on the evaluation of the effectiveness of business incubation programs (Lose & Tengeh, 2016); assessing the impact of incubation programmes on small and medium enterprise development in the Western Cape province of South Africa (Lose, Maziriri & Madinga 2016); the relevance and challenges of BIs that support survivalist entrepreneurs (Tengeh & Choto 2015); small BIs in South Africa: emergence, geography and local impacts (Masutha, 2015), The importance and effectiveness of assistance programs in a business incubator (Marimuthu & Lakha 2015); critical Success factors for BIs in South Africa (Kavhumbura, 2014), Factors for BIs in South Africa networking skills of government-funded incubator managers as perceived by incubatees (De Beer, 2012) and the performance of the BIs in South Africa Ramluckan (2010).

4. Research Opportunities on Business Incubator

This research lends itself to many opportunities for further studies in business incubators. Therefore, new research could explore the creation and self-sufficiency of BIs in South Africa. New studies should explore why South African universities lack BIs, and the barriers to BIs. Why do entrepreneurs choose to join the incubation programmes in South Africa? What are the conditions that inhibit the entrepreneurial behaviour by BIs? This research proposes that future research should look into developing and testing a suitable business model for South African incubators. One major area that new research could focus on would be to determine critical factors that affect the growth of incubatees in South Africa. There is also a need to conduct a similar investigation on business incubation's current literature and future opportunities. Another interesting area for future research might be to consider how business incubation programs can positively influence and create entrepreneurial ventures.

Business incubators emerged as a popular operational strategy to guide new venture creation in the 1990s and most of the current literature was established during the same time period. However, the result of BIs is still vague. Future study should point out gaps in the current literature and examine the link between incubation programme implementation and firms' performance metrics by analysing data. Also, the impact of incubatees on employment creation and economic development in South Africa should be examined. Future research should include the measuring and quantifying of strategic incubation outcomes in relation to key performance criteria to developing value-adding metrics. Another interesting area for future research might be to consider the role of human resource practice in the performance of BIs.

In addition, there is also a need to conduct a similar investigation on the impact of managerial competencies and financial skills on the failure for both incubatees and incubators. Future research should examine the impact of market competition on the failure of incubates and the role that economic factors play in the failure of incubated businesses. Another interesting area for future research might be to provide recommendations on how to mitigate the high number of small business failures in South Africa.

5. Limitations

The study focused on current literature and research opportunities of the business incubator. Furthermore, it is not possible that all the studies on BIs have been taken into consideration, despite an in-depth Internet search by the researchers.

6. Conclusion

This paper has sought to review current literature relating to business incubation for small startup businesses. The study proposed areas for future research opportunities not limited to the following: the need to develop a robust, operational sable, set of comparable performance indicators not absolute performance measures for business incubation. The literature on business incubation needs to be integrated more effectively within established areas of research such as cluster theory, regional innovation systems, entrepreneurship, investment, and firm growth. Hence, it is important for the private sector and institutions of higher learning to promote business incubation programmes. The current study supports incubators receiving more attention in South Africa and holds the belief that incubators are a proven strategic tool for small start-up businesses.

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