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Intellectual Property Rights (IPRs) and Pharmaceutical Manufacturing Organizations' Business Performance.

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Abstract
The purpose of the study is to investigate the influence of Intellectual Property Rights (IPRs) on Jordanian Pharmaceutical Manufacturing (JPM) Organizations' Business Performance (BP). Practical data were used in the empirical analysis collected from 126 managers out of 250 managers of the mentioned organizations, by means of a questionnaire. Statistical techniques such as descriptive statistics, t-test, ANOVA test, correlation, multiple regressions, and stepwise regressions were employed. To confirm the suitability of data collection instrument, a Kolmogorov-Smirnov (K-S) test, Cronbach's Alpha and factor analysis were used. The results of the study indicated a positive significant relationship between IPRs and Pharmaceutical Organizations' business performance. The use of a single industry study design limits its generalisability to other industries. The research results might help both academics and practitioners to be more ready to understand the components of IPRs and provide insight into developing and increasing them within their organizations. IPRs are an important source of organizations' wealth and therefore it should be taken into serious consideration when formulating the JPM Organizations' strategy. This study extends prior research's viewpoint about the linear relationship between IPRs and organizations' BP with empirical evidence.

Key words: *Intellectual Property Rights (IPRs), Innovation and Creation (I&C), Research and Development (R&D), Intellectual Assets (IA), Jordanian Pharmaceutical Manufacturing (JPM) Organizations, Business Performance (BP).*

1. Introduction:

The process of globalization and the emergence of a rules-based multilateral trading system pose significant challenges to local pharmaceutical industries in developing countries (Kılıc, 2011). The pharmaceutical industry is currently undergoing significant change, driven by factors such as declining research and development (R&D), vigorous competition from generics industry, the emergence of new markets in middle-income countries, and social pressures (Wellcome Trust, 2011).

The term intellectual property rights (IPRs) refers to those legal rules, norms and regulations that prevent the unauthorized use of intellectual products (Merrill and Elliott, 2004). IPRs essentially consist of two domains: one deal with industrial products, which includes patents,

trademarks, industrial designs and geographical indications of source, and the other with artistic products, which are covered by copyright and related rights (The Least Developed Countries Report, 2007). Once IPRs are established, its owner enjoys certain specified rights in terms of its duration, 20 years for patents and life plus 50 years for copyrights (The Least Developed Countries Report, 2007). The patent system is one of the most successful and important components of the system for managing IPRs that underpins the global knowledge economy (European Patent Organization, 2007).

World Trade Organization (WTO): A global body, established in 1995, that regulates international trade; responsible for the Trade-Related Aspects of IPRs (TRIPS) agreement (Opinion Formers' Conference on Intellectual Property for Better Health, 2011). According to Article 7 of the TRIPS Agreement, "the protection and enforcement of IPRs should contribute to the promotion of technological innovation and to the transfer and dissemination of technology" (United Nations, 2011). IPRs encourage innovation by granting successful inventors temporary monopoly power over their innovations (Falvey and Foster, 2006).

Jordan signed a TRIPS-plus Free Trade Agreement (FTA) with the United States in 2001 (Collins-Chase, 2008). For Jordan, the pharmaceutical sector is economically the most significant intellectual-property-sensitive sector (Nesheiwat, 2012) and it represents Jordan's second leading sector (Kogan, 2006). So, it is worth to study the effect of IPRs on Jordanian Pharmaceutical Manufacturing Organizations' Business performance.

2. Literatures Review:

With the increasing share of knowledge-intensive products in international trade and the inclusion of TRIPs on the agenda of the multilateral trading system, IPRs have become an important trade issue (Fink and Braga, 2005). International policies toward protecting IPRs have seen profound changes over the past two decades (Fink and Maskus, 2005).

Academics, scholars, practitioners and decision makers are divided into two groups: First group claim that there is a positive effect of IPRs implementation on innovation, technology transfer, foreign direct investment (FDI), growth and organizations business performance. While, second group are against the IPRs implementation and justify why they are so.

Some scholars and practitioners support IPRs protection implementation such as: Lesser (2002) advocated that IPRs strength index is positively and significantly associated with both imports and FDI. Maskus (2005) stated: strengthening IPRs can be an effective means of inducing additional inward FDI. Bollen et. al. (2005) concluded: IP as an intermediary has direct and indirect influence on organization's business performance. Park and Lippoldt (2008) revealed: IPRs can directly stimulate local innovation as well as indirectly by stimulating the transfer of technologies that foster local innovation. Briggs (2008) concluded: The acquisition of IPRs in developing countries is found to have a significantly positive impact on developing country exports. Reinstaller et. al. (2010) concluded: IPRs protection, standards and regulations are important institutional factors affecting innovation at the firm level. Hassan et. al. (2010) concluded: Theoretically, strengthening IPRs can have positive effect on international trade. Carpenter (2011) concluded: IPRs play a positive role in attracting technology. Lorenz and Veer (2012) showed: IPRs play a key role to protect and leverage intellectual assets and to open innovation and to facilitate collaborative partnerships. Breitwieser and Foster (2012) concluded: The main purpose of IPRs is to encourage innovation by granting innovators a temporary monopoly over their innovations. Ilias and Fergusson (2011) concluded: IPRs are important source of comparative advantage. Roy (2011) suggested: There is a strong correlation between

R&D leading to IPRs and profitability. Kvarnstrom (2011) concluded: Industrialized nations believe in enforceable IPRs system that ensures inventors profit as an incentive for further research and innovation. Kabore (2012) concluded: IPRs protection positively impacts the local innovation and productivity.

Another group of scholars and practitioners are against such as: Lall (2003) sated: The present value of the benefits of TRIPS does not outweigh its costs for many poor countries. Grace (2004) revealed: The introduction of product patents means that Indian firms will have reduced revenue options for the sale of drugs domestically. Yang and Maskus (2005) pronounced: It is impossible to claim that stronger IPRs encourage more licensing contracts and additional transfer of technological information. Maskus et. al. (2005) concluded: In China, stronger IPRs alone are not sufficient to establish effective conditions for further technology development and growth. Ganslandt et. al. (2005) said: The poorest nations of the world suffer from extreme disease burdens, which go largely untreated because weak incomes and the prevailing system of IPRs fail to provide sufficient incentives to develop new treatments and distribute them at low cost. Outterson (2008) concluded: The pharmaceutical IP system works well in high-income countries, while, it does not work for the poor in low- and middle-income countries. Possas (2008) revealed: TRIPS are difficult to apply in developing countries, due to political and trade pressures. Hassan et. al. (2009) found that stronger IPRs can hamper access to medicines in developing countries and do not encourage pharmaceutical innovation. Nanda and Srivastava (2009) concluded: Stronger IPRs protection may prevent users or recipients from obtaining access to technologies in order to adapt them to suit their own needs and requirements. Islam (2010) concluded: The TRIPS standard-setting in relation to agriculture and pharmaceuticals does not help the country to fulfill subsistence needs or promote economic development through innovations. Popov (2011) concluded: Strict protection of IPR can have a negative effect on economic development.

While, the third group of authors and academics are more faire, because they studied and investigated the effect of IPRs on country by country, such as: Fink (2005) found: IPRs do not seem to play an important role in influencing total international transactions of U.S. firms. While, IPRs protection has a positive influence on total German exports. Falvey and Foster (2006) concluded: It seems that the implications of stronger IPRs depend on a country's level of development. Demyanchuk (2006) found: IPRs protection has positive influence on GDP growth in low-income countries and countries with low level of IPRs protection. Correa (2007) concluded: It is logical to incorporate sufficient flexibilities for developing countries to design the systems of IPRs in a manner that is consistent with their development needs. Nederland (2009) concluded: FTA is expected to have substantial positive impacts on GDP, income, trade and employment. Lorenczik (2011) concluded: For developing countries, the acquisition of foreign knowledge and technologies from advanced economies and promotion of domestic R&D are essential for a successful transition from low-cost manufacturing economies to innovative industrialized countries.

Finally, even for Jordan, there is no unified empirical evidence concerning the effect of IPRs on Jordanian economy, while Kogan (2006) sated: Jordan's generic pharmaceutical companies have benefited from the stronger IP-protection laws by gaining new export markets and by starting to engage in innovative research. Samawi et. al. (2012) stated: IPRs protection in Jordan harmed the pharmaceutical industry, one of the most important sectors of the Jordanian economy. Nesheiwat (2012) also concluded: Jordanian IP laws lack a meaningful social and economic texture, and have failed to be evenly enforced in Jordan, essentially because they do not fit the Jordanian culture and are not compatible with Jordan's economic stage of

development. So, he concluded that: IPRs have significant and negative impact on Jordanian economy, as well as, on Jordanian Pharmaceutical industry.

In the light of the mentioned above literature reviews, the current study are attempting to investigate the influence of IPRs on Jordanian Pharmaceutical Manufacturing organizations' business performance, through examining the managers' perceptions regarding significance and potential use of IPRs indicators to leverage JPM Organizations' BP.

3. Study Importance and Scope:

The current study presents the necessary components of IPRs. It partially focuses on managerial norms, and partially on social norms. A better understanding of the effect of IPRs elements on the Pharmaceutical Organizations' business performance draws conclusions that can be beneficial not only for Pharmaceutical Organizations, but also to other organizations, institutions and policy makers. The content also may be of an interest to academic studies related to the reporting and decision making concerning IPRs. This study could present an important cornerstone that facilitates cross-disciplinary dialogue and hopefully establishes a research field of IPRs in Jordan.

4. Study Purpose and Objectives:

The main purpose of this study is to explore the effect of IPRs elements (innovation & creation, research & development and intellectual assets) on Pharmaceutical Organizations' Business Performance. More specifically, this study intends to answer the following question: Is there a direct impact of IPRs on Pharmaceutical Organization's business performance?

The main objective of this research is to provide sound recommendations about performance measurement within IPRs context by identifying and defining the main attributes of quality and productivity of IPRs, i.e. to point out critical factors of IPRs and find suitable ways for measuring and management them.

5. Study Problem Statement:

The effect of IPRs implementation on countries' economy is varied from country to country, furthermore; its effect varies from industry to industry within the same country. Few researches have been carried out studies to investigate the effect of IPRs on Jordanian economy, and very few studies have been conducted to explore the impact of IPRs on Jordanian Pharmaceutical industry. Previous studies were contradicting with each other, Kogan (2006) concluded that Jordan's generic pharmaceutical companies have benefited from the stronger IPRs, while Samawi et. al. (2012) stated: stronger IPR protection harmed the Jordanian Pharmaceutical industry. Finally, Nesheiwat (2012) proclaimed: IPRs have significant and negative impact on Jordanian economy, as well as, Jordanian Pharmaceutical industry. So, this study is designed to investigate the effect of IPRs on JPM organizaions' business performance.

6. Problem Elements:

The study problem can be perceived by having detailed and scientific answers for the following questions:

The main question: Is there a direct impact of IPRs on Pharmaceutical Organizations' business performance?

This question is divided into three questions:

1.1. Is there a direct impact of Innovation and Creation variable on Pharmaceutical Organizations' business performance?

1.2. Is there a direct impact of Research and Development variable on Pharmaceutical Organizations' business performance?

1.3. Is there a direct impact of Intellectual Assets variable on Pharmaceutical Organizations' business performance?

7. Study Hypotheses:

Based on the mentioned above problem statement and its elements, the following hypotheses can be developed:

Main Hypothesis: IPRs elements (variables) do not have a direct impact on Pharmaceutical Organizations' business performance, at ($\alpha \leq 0.05$).

This hypothesis can be divided into three hypotheses:

1.1. Innovation and Creation variable does not have a direct impact on Pharmaceutical Organizations' business performance, at ($\alpha \leq 0.05$).

1.2. Research and Development variable does not have a direct impact on Pharmaceutical Organizations' business performance, at ($\alpha \leq 0.05$).

1.3. Intellectual Assets variable does not have a direct impact on Pharmaceutical Organizations' business performance, at ($\alpha \leq 0.05$).

8. Methods and Procedures

8.1 Study Design:

The current study is considered as a casual study. It aimed at investigating the cause/effect relationship between IPRs elements and Pharmaceutical Organizations' business performance. Data were collected from managers in the Jordanian Pharmaceutical Organizations. Secondary data were collected from organizations' annual reports, journals, books, researches, thesis, dissertations, articles, working papers, and the Worldwide Web. Primary data flowed to the researcher from expert interviews, content analysis, panel of judges, and the survey. A questionnaire was designed and developed in contrast with hypotheses. Then the questionnaire was validated through expert interviews and panel of judges. The collected data were verified through the SPSS 20 software focusing on the correlation among IPRs variables and their relationship with Pharmaceutical Organizations' business performance.

8.2 Study Population, Sample and Unit of Analysis:

All Jordanian Pharmaceutical Manufacturing Organizations are chosen to explore the topic of IPRs. The survey is composed of 250 managers of Jordan's Pharmaceutical Organizations.

9. Data Collection and Analysis:

Questionnaires were delivered to 150 out of 250 managers, or 60% of population.135 questionnaires representing a response rate of 54%.126questionnaires were analyzed. The responses were coded against SPSS 20.

9.1. Kolmogorov-Smirnov Z Test for Normal Distribution:

Significance level shall be more than 5 percent to assume normality (Bollen et. al. 2005). Table (1) shows that all the independent and dependent variables were normally distributed.

Table(1): Normality Test: One-Sample Kolmogorov-Smirnov (Z) Test

Variables and Sub-variables	**(K-S)Z**	**Sig.**
Innovation & Creation	0.593	0.874
R&D	0.725	0.669
Intellectual Assets	0.557	0.916
IPRs	0.679	0.746
Business Performance	**0.872**	**0.433**

9.2. Reliability Test (Cronbach's Alpha):

Bontis (2001) stated that Alpha coefficients above 0.7 are accepted while Bollen et. al. (2005) said: If Alpha Coefficients were below 0.60, then results indicated weak internal inconsistency. Table (2): Cronbach's Alpha coefficients were registered acceptable; however, Cronbach's Alpha results were between 0.870 and 0.929.

Table (2): Cronbach's Alpha:

Variable and Sub-variable	**No.**	**Research**
Innovation & Creation	7	0.870
R&D	7	0.909
Intellectual Assets	7	0.929
IPRs	21	0.929
Business Performance	**10**	**0.901**

9.3. Validity:

Two methods were used to confirm content validity (construct validity): First, multiple sources of data were used to develop and refine the model and measures. Then, factor analysis was carried out for all items included in the questionnaire.

Factor Analysis (Pearson's Principal Component Analysis): The factor loading value below 0.4 should be removed (Bontis, 2001) and (Bollen et. al. 2005). Tables (3 & 4) showed that all variable items were valid, since their factor loading values were more than 0.4.

Table (3): Factors Loading for IPRs and BP Variables

Variables	**Factor 1**	**Extraction**
Innovation & Creation	0.804	0.646
R&D	0.874	0.764
Intellectual Assets	0.697	0.486
IPRs	0.977	0.955
Business Performance	0.688	0.473

Extraction Method: Principal Component Analysis

Table (4): Factors Loading for IPRs and BP Variables Items

Variables Items	Component				
	Factor 1				Extract
Employees are expert in their area	0.710				0.504
Give it all they have to make it different	0.714				0.509
Employees are creative & bright	0.707				0.500
Encouraged to bring new ideas	0.804				0.647
Come up with new ideas	0.741				0.549
Innovation policies & programs	0.855				0.730
Culture atmosphere support innovation	0.721				0.519
Research leader		0.846			0.715
Continuous development of work processes		0.862			0.744
Continuously develops and Re-organizes itself		0.749			0.561
Adopt latest scientific & technical development		0.814			0.663
Systems & programs support innovation		0.785			0.616
Appropriate & adequate R&D budget		0.803			0.645
Board trust & support R&D		0.784			0.615
Sets clear IPRs strategies & procedures			0.855		0.731
Monitors IPRs portfolio			0.802		0.643
Pursues a multiple strategy of licensing IPRs			0.838		0.702
Encourage & reward creation			0.892		0.796
IPRs considered for value creation			0.881		0.776
Maximum utilization of IPRs to maximum level			0.849		0.721
High no. of IPRs			0.748		0.559
Industry leadership				0.675	0.707
Future outlook				0.636	0.750
Overall response to competition				0.686	0.623
Success rate in new launches				0.790	0.702
Overall business performance and success				0.822	0.696
Employee productivity				0.630	0.844
Process (transaction) productivity				0.666	0.842
Sales growth				0.796	0.844
Profit growth				0.807	0.866
Company market valuation (stock value)				0.755	0.749

Component Matrix: Extraction Method: Principal Component Analysis.

10. Data Analysis and Results

10.1. Variables Analysis

Intellectual Property Rights: Table (5) shows that the average means of the respondents' perception about the implementation of IPRs variables are ranging from 2.636 to 3.152, with standard deviation that ranges from 0.670 to 0.976. The average total mean for the three variables is 2.918 with standard deviation 0.691. Such results indicate that there is a varied agreement on the implementation of IPRs variables. The overall result indicates that there is no

significant implementation of the IPRs among Jordanian Pharmaceutical Organizations, where the total average mean is 2.918 with standard deviation 0.691 and (t=-1.332 < 1.645).

Table (5): Mean, Standard Deviation and One-Sample T-Test Results for IPRs Variables.

IPRs Variables	Mean	Std. Deviation	T Value	T Tabulated
Innovation & Creation	3.152	0.670	2.437	1.645
R&D	2.966	0.896	-0.426	1.645
Intellectual Assets	2.636	0.976	-0.419	1.645
IPRs	**2.918**	**0.691**	**-1.332**	**1.645**

Innovation and Creation Variable: Table (6) shows that the average means of respondents' perception about the implementation of innovation and creation variable items are ranging from 2.62 to 3.42, with standard deviation that ranges from 0.794 to 1.085. Such results indicate that there is a varied agreement on the implementation of innovation and creation variable items. The result indicates that there is a significant implementation of the innovation and creation variable, where the total average mean is 3.15 with standard deviation 0.670 and (t=2.437 > 1.645).

Table (6): Mean, Standard Deviation and One-Sample T-Test Results for Innovation & Creation Variable Items.

Statement	Mean	Std. Deviation	T Value	T Tabulated
Employees are expert in their area	3.42	0.794	5.950	1.645
Give it all they have to make it different	3.38	0.928	4.607	1.645
Employees are creative & bright	3.30	0.860	3.934	1.645
Encouraged to bring new ideas	3.17	1.002	1.867	1.645
Come up with new ideas	3.06	0.832	0.749	1.645
Innovation policies & programs	2.62	1.003	-4.264	1.645
Culture atmosphere support innovation	3.12	1.085	1.231	1.645
Mean Total	**3.15**	**0.670**	**2.437**	**1.645**

Research and Development Variable: Table (7) shows that the average means of respondents' perception about the implementation of R&D variable items are ranging from 2.80 to 3.15, with standard deviation that ranges from 0.991 to 1.214. Such results indicate that there is a varied agreement on the implementation of R&D variable items. The result indicates that there is no significant implementation of the R&D variable, where the total average mean is 2.97 with standard deviation 0.896 and (t=-0.426 < 1.645).

Table (7): Mean, Standard Deviation and One-Sample T-Test Results for Research & Development Variable Items.

Statement	Mean	Std. Deviation	T Value	T Tabulated
Research leader	2.80	1.213	-1.835	1.645
Continuous development of work processes	3.07	1.029	0.779	1.645
Continuously develops and Re-organizes itself	3.05	1.057	0.506	1.645
Adopt latest scientific & technical development	2.96	.991	-0.449	1.645
Systems & programs support innovation	2.87	1.095	-1.301	1.645
Appropriate & adequate R&D budget	2.86	1.178	-1.361	1.645
Board trust & support R&D	3.15	1.214	1.395	1.645
Mean Total	**2.966**	**0.896**	**-0.426**	**1.645**

Intellectual Assets Variable: Table (8) shows that the average means of respondents' perception about the implementation of intellectual assets variable items are ranging from 2.13 to 2.86, with standard deviation that ranges from 1.133 to 1.213. Such results indicate that there is a varied agreement on the implementation of intellectual assets variable items. The result indicates that there is no significant implementation of the intellectual assets variable, where the total average mean is 2.64 with standard deviation 0.976 and (t=-0.419 < 1.645).

Table (8): Mean, Standard Deviation and One-Sample T-Test Results for Intellectual Assets Variable Items.

Statement	Mean	Std. Deviation	T Value	T Tabulated
Sets clear IPRs strategies & procedures	2.67	1.213	-3.084	1.645
Monitors IPRs portfolio	2.86	1.150	-1.394	1.645
Pursues a multiple strategy of licensing IPRs	2.79	1.141	-2.031	1.645
Encourage & reward creation	2.75	1.198	-2.305	1.645
IPRs considered for value creation	2.67	1.152	-3.247	1.645
Maximum utilization of IPRs to maximum level	2.59	1.133	-4.088	1.645
High no. of IPRs	2.13	1.159	-8.454	1.645
Mean Total	**2.636**	**0.976**	**-0.419**	**1.645**

Business Performance Indicators (BP): Table (9) shows that the average means of the respondents' perception about the role of business performance indicators are ranging from 3.30 to 3.96, with standard deviation that ranges from (0.739 to 0.9452). Such result indicates that there is a significant role of business performance indicators, where the mean of total average is 3.48 with standard deviation 0.636 and (t=8.391 > 1.645).

Table (9): Mean, Standard Deviation and One-Sample T-Test Results for BP Indicators

Statement	Mean	Std. Deviation	T Value	T Tabulated
Industry leadership	3.50	0.865	6.489	1.645
Future outlook	3.96	0.924	11.662	1.645
Overall response to competition	3.41	0.897	5.165	1.645
Success rate in new product launches	3.30	0.897	3.775	1.645
Overall business performance and success	3.56	0.806	7.742	1.645
Employee productivity	3.40	0.791	5.633	1.645
Process (transaction) productivity	3.40	0.739	6.144	1.645
Sales growth	3.42	0.941	5.017	1.645
Profit growth	3.45	0.952	5.336	1.645
Company market valuation (stock value)	3.35	0.915	4.284	1.645
Mean Total Performance	**3.48**	**0.636**	**8.391**	**1.645**

10.2 Bivariate Pearson's Correlation Coefficient:

Before testing the hypotheses, Pearson correlation (r) was carried out to test the correlation among the responses of IPRs variables, then between them and business performance indicators.

Table (10): Bivariate Pearson's Correlation (r) Among Independent Variables, Sub-variables and With Dependent Variable

Correlations					
Variable	I&C	R&D	IA	IPRs	BP
Innovation & Creation					
R&D	0.594**				
Intellectual Assets	0.294**	0.518**			
IPRs	0.733**	0.877**	0.794**		
Business Performance	0.620**	0.489**	0.227*	0.527**	

**** Correlation is significant at the 0.05 level.***

***** Correlation is significant at the 0.01 level***

Pearson correlation matrix table (10) shows that the relationships among the IPRs variables are strong, where r ranges from 0.294 to 0.594. It shows that the relationship between the total IPRs and each IPRs variable is very strong, where r ranges from 0.733 to 0.877. The matrix also shows that the relationship between IPRs variables and Pharmaceutical Organizations' business performance is strong, where r ranges from 0.227 to 0.620. For total IPRs r reaches 0.527, which indicates a very strong relationship between IPRs and Pharmaceutical Organizations' business performance.

To test hypotheses, a multiple regression analysis was used to analyze the relationship between the IPRs variables and Pharmaceutical Organizations' business performance. Regression analysis is robust against non-normality, multi-collinearity and independence of error, therefore, applicable in the case at hand.

Multi-collinearity: Table (11) shows that VIF value is less than 10 and the Tolerance value is more than 0.2. This indicates that there is no Collinearity within the independent variables of the study.

Table (11): Multi-Collinearity Test for Main Hypothesis:

IPRs Variables	Multi-Collinearity Statistics	
	Tolerance	**VIF**
Innovation & Creation	0.647	1.546
R&D	0.18	1.929
Intellectual Assets	0.732	1.367

Dependent Variable: Business Performance

Independence of errors: Durbin Watson test is conducted, where (d=1.479), which approximately equals two. This indicates that the residuals are not correlated with each other; therefore, the independence of errors is not violated.

10.3. Multiple Regressions:

The R square value is 0.408; therefore, the model is regarded as being suitable to be used for multiple regressions with the data.

Table (12): Results of Multiple Regression Analysis: Regressing IPRs Variables against BP

Variable	r	R^2	ANOVA F- Value	Sig.
IPRs	0.639	0.408	27.997	0.000

a. Predictors: (Constant), Intellectual Assets, Innovation & Creation, Research & Development

b. Dependent Variable: Business Performance.

Main Hypothesis:

Ho: IPRs elements (variables) do not have a direct impact on Pharmaceutical Organizations' business performance, at ($\alpha \leq 0.05$).

Table (12) shows that the three variables together explained 40.8 percent of the variance, where (R^2 =0.408, F=27.997, Sig. =0.000). Therefore, the null hypothesis is rejected and the alternative hypothesis is accepted, which states that the IPRs variables affect Pharmaceutical Organizations' business performance, at α =0.05. The following table shows the significant effect of each variable within the IPRs.

Table (13): Un-standardized and Standardized Coefficients of Multiple Regression Model for IPRs Variables:

IPRs Variables	Un-standardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t-value	p
(Constant)	1.641	0.214		7.660	0.000
Innovation and Creation	0.463	0.079	0.510	5.882	0.000*
R&D	0.142	0.069	0.200	2.064	0.041*
Intellectual Assets	-0.017	0.053	-0.027	4.350	0.744

a. ***Dependent Variable: Business Performance***

b. ***Calculate is Less than 0.05***

The conclusion of table (13) shows that the innovation and creation variable has the highest effect on Pharmaceutical Organizations' business performance, where (Beta=0.510, sig.=0.000). Thus, it indicates that the innovation and creation variable is the most significant, and it positively and directly regresses to the Pharmaceutical Organizations' business performance, followed by the R&D variable, where (Beta=0.200, sig.=0.041), then the intellectual assets variable, where (Beta=-0.027, sig.=0.744). The relationship between the dependent and independent variables derived by this model can thus be expressed as:

Intellectual Property Rights = 1.641 + 0.463 (Innovation and Creation) + 0.142 (Research and Development) - 0.017 (Intellectual Assets).

Sub Hypothesis 1-1

Ho: Innovation and Creation variable does not affect the Pharmaceutical Organizations' business performance, at ($\alpha \leq 0.05$).

From table (13), it is concluded that there is a positive direct effect of the innovation and creation variable on the Pharmaceutical Organizations' business performance, where (Beta=0.510, sig.=0.000). Since (t=2.064, $P < 0.05$), the null hypothesis is rejected and the alternative hypothesis is accepted, which indicates that the innovation and creation variable positively and directly affects the Pharmaceutical Organizations' business performance, at α =0.05.

Sub Hypothesis 1-2

Ho: Research and Development variable does not affect the Pharmaceutical Organizations' business performance, at ($\alpha \leq 0.05$).

From table (13), it is concluded that there is a positive direct effect of the R&D variable on the Pharmaceutical Organizations' business performance, where (Beta=0.200, sig.=0.041). Since (t=0.329, $P < 0.05$), the null hypothesis is rejected and the alternative hypothesis is accepted, which indicates that the R&D variable positively and directly affect the Pharmaceutical Organizations' business performance, at α =0.05.

Sub Hypothesis 1-3

Ho: Intellectual assets variable does not affect the Pharmaceutical Organizations' business performance, at ($\alpha \leq 0.05$).

From table (13), it is concluded that there is a weak negative direct effect of the intellectual assets variable on the Pharmaceutical Organizations' business performance, where (Beta=-0.027, sig.=0.744). Since (t=4.350, $P > 0.05$), the null hypothesis is accepted, which indicates that the intellectual assets variable does not affects the Pharmaceutical Organizations' business performance at $\alpha = 0.05$.

10.4. Stepwise regression:

To determine which variables are important in this model, the researcher used stepwise regression shown in the following table:

Table (14): Stepwise Regressions (ANOVA) for IPRs Variables

Model	r	R^2	F	Sig.	IPRs Variables
1	0.620(a)	0.385	77.603	.000	Innovation & Creation
2	0.638(b)	0.407	42.248	.000	Innovation & Creation plus R&D

From table (14) above, the first stepwise regression model shows the importance of the innovation and creation variable, where ($R^2=0.385, F=77.603, Sig.=0.000$). The second stepwise regression model shows the importance of the innovation and creation variable plus the R&D variable, where ($R^2=0.407, F=42.248, Sig.=0.000$). Therefore, it is concluded that the second model increases R^2 with only 0.022. This means that the innovation and creation variable alone explains 38.5% of the variance in the Pharmaceutical Organizations' business performance, while the second model explains 40.7% of the variance. This means that it adds only 2.2% to the first model. The following table shows the relation between the IPRs variables and Pharmaceutical Organizations' business performance:

Table (15): Stepwise Regressions Model for IPRs Variables against BP

	Model 1		Model 2	
IPRs Variables	Un-standardized Coefficients	beta	Un-standardized Coefficients	beta
Constant	1.698		1.623	
Innovation & Creation	0.564	0.620	0.464	0.510
R&D	-		0.132	0.186
Intellectual Assets	-	-	-	-

sig. <0.05

From table (15), the first model of stepwise regression shows that there is a positive direct relation between the innovation and creation variable and Pharmaceutical Organizations' business performance, where beta equals 0.620. The second model of stepwise regression shows that there is a positive direct relation between the innovation and creation variable plus the R&D variable with the Pharmaceutical Organizations' business performance, where beta equals 0.510 and 0.186, respectively.

Such results indicate that the innovation and creation variable is the most important variable, followed by the R&D variable, while the intellectual assets variable does not significantly impact the Pharmaceutical Organizations' business performance.

11. Discussions and Conclusion:

The result indicated that there is a significant implementation of the innovation and creation variable, while there is no significant implementation of the R&D variable and intellectual assets variable among Jordanian Pharmaceutical Organizations. The overall result indicated that there is no significant implementation of IPRs variables among Jordanian Pharmaceutical Organizations. Generally, it seems that respondents were either aware of the role of the IPRs variables in Pharmaceutical Organizations' business performance, or do they believe that the IPRs variables affect Pharmaceutical Organizations' business performance positively. It also seems that the employees are not in agreement on the implementation of the IPRs variables items. It appears that the respondents strongly believe that innovation and creation variable affect the Pharmaceutical Organization's business performance, while they do not believe that the R&D variable and intellectual assets variable affect positively the organization's business performance. The reason for this may be related to the low awareness of the role of IPRs in Pharmaceutical Organizations' business performance. Moreover, although the Pharmaceutical Organizations are heavily weighted with professional and technical staff, this may be due to the nature of generic industry, the lack of the board support, misunderstanding the value of IPRs, and there is no strong relationship between academic institutions and pharmaceutical organizations (basic and secondary research). IPRs need a strong R&D department, R&D need high investment that might be not available, and the return from R&D may come late or even may not come at all from some researches. Finally, it seems that the government policies, systems and programs do not support the R&D, which are considered as crucial for innovation and intellectual assets. The above results are contradicting with Bollen et. al (2005), and Chen (2004). Both studies are carried out on Pharmaceutical industry, but in more developed countries: German and Taiwan where they oversee the importance of R&D and intellectual assets and they have strategies to develop both of them.

Multiple regressions results showed that the innovation and creation variable and the R&D variable were positively and directly affecting the Pharmaceutical Organizations' business performance, while the intellectual assets variable does not affect the Pharmaceutical Organizations' business performance. The overall results indicated that the IPRs variables affect Pharmaceutical Organizations' business performance. Moreover, both multiple and stepwise regressions indicated that the innovation and creation variable was the most significant, and it positively and directly regresses to the Pharmaceutical Organizations' business performance, followed by the R&D variable, while the intellectual assets variable effect was not significant (negative effect). The above results are going in line with the following studies: Grace (2004): IPRs reduce revenue of Indian firms, Maskus et. al. (2005): IPRs alone are not sufficient for further development and growth in China, Ganslandt et. al. (2005) IPRs failed to provide incentives to develop new products, Outterson (2008) Pharmaceutical IPRs system does not work for the poor and middle income countries, Possas (2008) TRIPS are difficult to apply in developing countries, Hassan et. al. (2009) IPRs do not necessarily encourage Pharmaceutical innovation in developing countries, Islam (2010) TRIPS implementation on Pharmaceuticals does not help economic development of developing countries, Popov (2011) strict IPRs can have a negative effect on economic development. Finally, Samawi et. al. (2012): IPRs implementation harmed the Jordanian Pharmaceutical industry, Nesheiwat (2012): IPRs have had insignificant economic impact on the Jordanian economy, specially Pharmaceutical industry.

At the same time, the study results are contradicting with the following studies: Bollen et. al. (2005) IPRs directly and indirectly affects business performance, Kogan (2006) Jordan's generic Pharmaceutical companies have benefited from stronger IPRs protection. Park and Lippoldt

(2008): IPRs stimulate technology transfer, Briggs (2008): IPRs have significantly positive effect on developing countries, Nederland (2009): IPRs have positive impacts on economical growth, Reinstller et. al. (2010): IPRs positively affect innovation at the firm level, Carpenter (2011): IPRs play a positive role in attracting technology, Roy (2011) found a strong relationship between IPRs and profitability, Kabore (2012): IPRs positively impacts local innovation, Lorenz and Veer (2012): IPRs leverage intellectual assets and open innovation, Breitwisser and foster (2012): IPRs encourage innovation.

Finally, results indicated that there is an agreement on the role of business performance indicators and showed that there is a significant role of business performance indicators. Evidence seems to suggest an improvement in Pharmaceutical Organizations' business performance. Therefore, the Jordanian Pharmaceutical Organizations are directed and strongly leaning toward performance improvement, and the respondents are aware of the role of business performance indicators.

12. Limitations and Recommendations:

This study is specifically assigned to performance measurement within the IPRs context at the organizational level that should be studied in the light of the following limitations:

First, limitations to data access refer to the fact that data gathering through the questionnaires and annual reports is restricted to the period of these questionnaires and annual reports, which may limit the quality and quantity of the data collected. Second, this study presents a snapshot research that does not consider feedback effects. A longitudinal study to investigate the dynamic features of IPRs would provide further robust results. Third, the field of this study was restricted to pharmaceutical industry; it focuses on one type of industry. Further empirical work is needed to test the degree to which the study findings can be generalized to other organizations or industries. Further testing might consider a cross-sectional group of participants from a wide variety of industries. Fourth, the results are limited to Jordanian organizations. Generalizing results of a Jordanian setting to other countries may be questionable. Therefore, further empirical researches involving data collection over diverse countries are needed. Finally, measures may need to be refined. Although most variables used in this research have high measurement reliability and validity, some variables may have room for further instrument refinement.

13. Recommendations for Pharmaceutical Industry:

Jordanian Pharmaceutical Organizations have great potentials for future performance improvement. In the light of research results, the following recommendations can be suggested: First, the research results can help managers establish distinctive strategic positions. Building competitive strategies for managing IPRs is important, therefore, organizations should adopt IPRs strategy. Second, the optimal procedure for Pharmaceutical Organizations is to focus on all three components of IPRs in order to increase Pharmaceutical Organizations' business performance, since they enhance each other. Third, managers should design systems and set up appropriate programs for monitoring and managing IPRs and related databases. Then, they should develop standards for IPRs, including measurements, indices, benchmarks, policies and programs. Fourth, improve the relationships with universities and other academic institutions, to get the maximum benefit from the basic research. Finally, consider global strategic options for alliances, licensing, agreements and joint ventures.

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