

# Readiness to take risk among Management students

**Anna Turowska** 

Politechnika Warszawska, Wydział Zarządzania

e-mail: [anna.dorota.turowska@gmail.com](mailto:anna.dorota.turowska@gmail.com)

DOI: 10.24427/az-2022-0013

## Abstract

The aim of the research is to present the level of readiness to take business risk among Management students at SGH Warsaw School of Economics, Warsaw University of Technology and Warsaw University of Life Sciences SGGW. The study was conducted among 406 third-year students of Bachelor of Management Studies. Significant statistical difference in readiness to take risk between SGH Warsaw School of Economics, Warsaw University of Technology and Warsaw University of Life Sciences SGGW has been reported. A considerably higher level of readiness to take business risk has been noticed among students of the Warsaw School of Economics and Warsaw University of Technology. There is a need to develop this predisposition among students of the Warsaw University of Life Sciences who manifest low level of that variable. In accordance with the literature on the subject a thriving business organization cannot function without taking business risk. The lower level of readiness to take risk among SGGW Management students is associated with external locus of control.

## Keywords

readiness to take business risk, business organization, Management students, locus of control

## Introduction

A properly managed business organization must take into account the need to take business risks. It is not an easy matter. According to Zahra [1991], Wiklund and

Sheperd [2003], business risk is defined as a readiness to take bold actions and allocate financial resources to undertakings with a high probability of failure. However, business risk taking must not be the result of recklessness. It should be a controlled and calculated activity [Keh, Foo and Lim, 2000].

Numerous studies on different types of risk has been presented in the available literature but analyzes of the readiness to take business risk among Management students have not been found. The author decided to fill this gap using a questionnaire referring to the technique of Hughes and Morgan [2007]. The second questionnaire by Julian Rotter [1954] was also used, the research of which suggests that making bold decisions depends on the belief in one's own abilities. This may also apply to the willingness to take business risks. The author decided to verify this by examining the students of Management.

## 1. Epistemological analysis

One of the most important creators of modern management thought – Peter Drucker – stated that “a company that avoids risk will eventually bear the greatest and least justified risk of all possible: the risk of inaction” [Drucker, 2003].

The need to take risk in managing an organization has long been explored, also in Poland.

Professor of Warsaw University of Technology – engineer Karol Adamiński contributed to the establishing the Department of Principles of Work and Enterprise Organization at the university, which also took into account the issues of risk taking [Adamiński, 1938].

The second important center of management studies was the Lviv University of Technology. Professor Edwin Hauswald, a mechanical engineer of extensive international knowledge was the first in Europe to lecture at the Lviv Polytechnic Institute the subject of “Organization and Management of Industrial Enterprises”. He gathered a group of engineers who popularized the science of Management, also taking into account the need to take risk [Hauswald, 1926].

Afterwards, Julian Rotter [1954] in his research noticed that making bold decisions depends largely on the belief in one's own abilities. This also applies to the readiness to take risk under conditions of uncertainty. People differ in terms of beliefs about the possibility of achieving goals. Some individuals believe that “where there is a will there is a way”. Others, less certain, maintain that it is not so easy. What determines the certainty of achieving goals? – Perhaps temperament, intellectual performance, life history, self-esteem, and above all the ability to learn social behavior – based on one's successes and failures. Julian Rotter – the author of the Social Learning Theory, linking knowledge of the theory of learning and personality

– stated that the probability of a subject’s involvement in a certain behavior depends on the expectations of achieving a goal and the personal value of that goal. Predicting future events is determined by a reinforcement history that has developed one’s locus of control. In some situations these reinforcements depend on human behavior, and in others they will depend on something beyond one’s control. According to Rotter, there is a personality continuum, ranging from the belief that achieving the desired goal depends only on our behavior – to the belief that achieving the goal is independent of our actions, because it depends on luck, chance, will of people endowed with power, etc. The belief that the results of our actions depend on ourselves is assessed as internal locus of control; and the belief that the events are beyond our personal control is assessed as external locus of control. This belief may strongly refer to the willingness to take risk in managing a business organization.

Nowadays, in the era of the information technology revolution, the interest in modern Management is growing even more. Taking business risk is the subject of great deal of attention [Moczyłowska and Szydło, 2016].

Dvorský and co-authors [2020] discuss the issue of attitude to business risk and business failure among entrepreneurs that have experienced bankruptcy. Mosteanu [2020], in the paper on artificial intelligence reports the review of solutions that help to build up cyber security and reduce business risk. Also Benz and Chatterjee [2020] present cybersecurity models applied in small and medium-sized enterprises (SMEs) to reduce negative consequences of business risk. Fiedler, Pitman, Mackenzie and co-authors [2021] summarize the demands by business community for information on climate changes that have an impact on business risk. Machokoto, Araneke and Nyangara [2021] present business risks of emerging economies and provide empirical evidence on adverse and far-reaching effects of global financial crisis. Business risk is also widely discussed by Yang [2022] who propose an effective business prevention scheme for the Internet platform based on blockchain technology to ensure the information security and transaction security of enterprises.

In times of unstable business environment, when volatility and uncertainty are almost the only things predictable, Business Risk Management becomes particularly important. Managing such a kind of risk during the ongoing COVID-19 pandemic is extremely difficult. A risk imposed on us, as it were, by circumstances [McMaster et al., 2020]. The problem was also discussed by El-Baz and Ruel [2021] and Drydakis [2022].

And how one can take and manage the risk related to the development of an organization in “covid” circumstances, and armed conflict, afterward We can only count on the belief in our personal influence on the course of events. The trauma of

these events will probably be the subject of numerous studies and publications on business risk.

## **2. Research methodology**

### **2.1. Research objectives**

Three objectives has been set in the present research:

- 1) Estimating the risk readiness among Management students of SGH Warsaw School of Economics, Warsaw University of Technology and Warsaw University of Life Sciences – SGGW.
- 2) Assessment of locus of control in Management students – the sources (internal or external I-E) of risk generation.
- 3) Testing correlation pattern of readiness to take risk and locus of control (I-E risk generation).

### **2.2. Variables**

Independent variable:

- type of university.

Dependent variables:

- readiness to take risk,
- locus of control (internal vs. External source of risk generation).

### **2.3. Hypotheses**

Hypothesis 1. There are significant statistical differences in readiness to take risk among management students at SGH Warsaw School of Economics, Warsaw University of Technology and Warsaw University of Life Sciences – SGGW

Hypothesis 2. There are significant statistical differences in locus of control among examined groups of students

Hypothesis 3. Internal locus of control is positively related to readiness to take risk

## **2.4. Participants, procedure and method**

The study was conducted among 406 third-year students of full-time master studies, Faculty of Management. At SGH Warsaw School of Economics – 137 students, at Warsaw University of Technology – 134 students, and at Warsaw University of Life Sciences – SGGW – 135 students. Participants' age: 22÷25. The research was carried out by the author of this paper, in person, over a period of two years. The groups were selected on the ground of interjudge agreement method.

The acceptance of the authorities of each faculty was obtained concerning the study. The subjects were informed of the possibility of participating in an anonymous, voluntary survey, from which they can withdraw at any stage.

At the beginning the students matched their age and university name. Anonymity was guaranteed and it was made clear to participants that the analysis of the data would be carried out at the aggregate level, safeguarding their individual privacy.

Dependent variable were measured by means of implementing two research tools: 1) estimating readiness to take risk and 2) assessing of locus of control – sources (internal or external) of risk generation.

- 1) First questionnaire – based on Hughes and Morgan technique (Cronbach's alpha coefficient 0.78). Participants in the survey were asked to state their level of agreement with the given statements by thicking only one number from strongly disagree (1) to strongly agree (5). All items were gauged on five-point Likert-type scale.

The statements concerned the propensity of students to take risks in the organization they plan to manage. The respondents assessed the intensity of their acceptance of the presented sentences. Examples of items are as following:

- “The term risk taker is considered as positive attribute of employees and owner in the business”,
- “Employees in my business should be encouraged to take calculated risks with new ideas”,
- “Business should emphasize both exploration and experimentation for opportunities”.

[The assessment of the respondent's risk-taking readiness based on the sum of three scores out of the three statements contained in the questionnaire. The final score that equals 3 (3x1 points) means a low level of readiness to take risks, whereas the final score 15 (3x5) means the high level of this variable among examined subject.]

- 2) Second questionnaire – “I-E Scale” – measuring internal vs. external locus of control [Rotter 1966, adopted by Karyłowski].

[The total number of points obtained by the examined person ranges from 22 to 44. A strong external locus of control is 22 points, whereas a strong sense of the internal locus of control is 44 points].

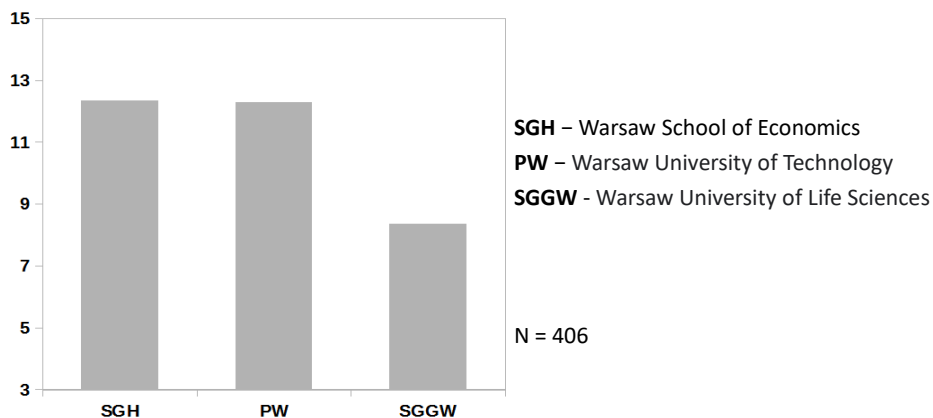
Additionally, the KAS technique [Wilczyńska and Drwal, 1980] was used, which made it possible to determine whether and to what extent the need for social approval had distorted the responses of the subjects.

The statistical packet SPSS 26 was applied in order to analyse the data.

### 3. Results

The results of the research indicate that students of Management at SGH Warsaw School of Economics, Warsaw University of Technology (PW) and students of Management at Warsaw University of Life Sciences – SGGW responded to the presented statements in a different way.

The following diagram illustrates readiness to take risk among third-year Management students of the universities listed above (Fig. 1).



**Fig. 1.** Declared readiness to take risk among third-year students – Faculty of Management: SGH Warsaw School of Economics, Warsaw University of Technology and Warsaw University of Life Sciences – SGGW

Source: author's research.

Post hoc pair-wise comparison result indicates that there is a strong main effect of variable: readiness to take risk. F-value of the ANOVA:  $F(2, 403) = 231, 83; p < 0,001$ .

Third-year Management students at SGH Warsaw School of Economics and Warsaw University of Technology manifest significantly higher level of readiness to take risk than Management students at Warsaw University of Life Sciences–SGGW.

Table 1 and Table 2 present descriptive statistics and post hoc comparisons with Bonferroni procedure for the variable readiness to take risk among Management students of SGH Warsaw School of Economics, Warsaw University of Technology and Warsaw University of Life Sciences–SGGW.

**Tab. 1.** Readiness to take risk among third-year Management students of SGH, PW and SGGW. Descriptive statistics

University Name	Mean (Arithmetic Average)	SD	N
SGH	12,33	1,80	137
PW	12, 28	1,73	134
SGGW	8,35	1,69	135

Range [3÷15] Total N=406

Source: author’s research.

**Tab. 2.** Readiness to take risk among third-year Management students of SGH, PW and SGGW.

Post hoc pair-wise comparisons

Readiness to take risk (I)	Readiness to take risk (J)	Difference between means (I - J)	Significance
SGH	SGGW	3,988*	0,000
	PW	0,045	1,000
PW	SGGW	3,943*	0,000

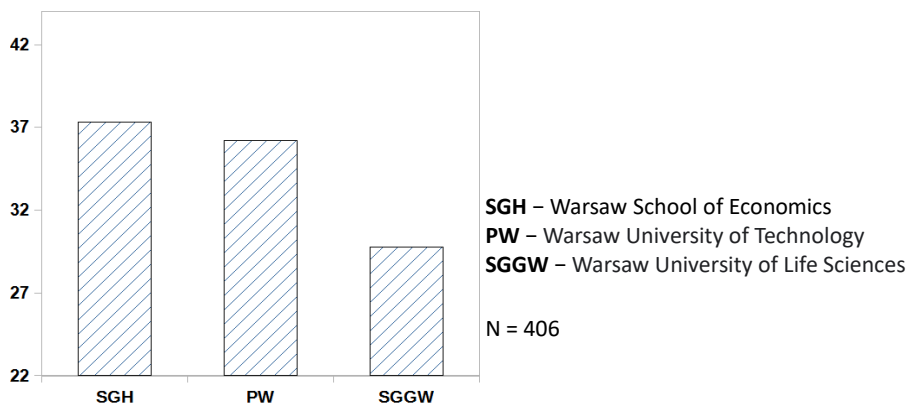
\* correlation is significant at the 0.05 level (two-tailed)

Source: author’s research.

Apart from estimating readiness to risk an additional analysis assessed locus of control of Management students, falling on a personality continuum from 22 for strong external to 44 for strong internal locus of control measured by Rotter’s scale.

Figure 2 illustrates locus of control among third-year Management students of the three surveyed universities (Fig. 2).

Post hoc pair-wise comparisons were performed. The analysis of variance showed the existence of strong main effect of the variable locus of control:  $F(2, 403) = 119, 950; p < 0,001$ .



**Fig. 2.** Locus of control of third-year students – Faculty of Management: SGH Warsaw School of Economics, Warsaw University of Technology and Warsaw University of Life Sciences – SGGW

Range – from 22 (strong external locus of control) to 44 (strong internal locus of control)

Source: author’s research.

Third-year Management students at SGH – Warsaw School of Economics and Warsaw University of Technology are of internal locus of control. There was no statistical difference between SGH and PW students. Whereas the score at IE-scale obtained by Management students at Warsaw University of Life Sciences – SGGW is significantly lower than in SGH and PW subjects. – It means SGGW students are of external locus of control.

Table 3 and Table 4 present descriptive statistics and post hoc comparisons with Bonferroni procedure for the variable locus of control among Management students of SGH Warsaw School of Economics, Warsaw University of Technology and Warsaw University of Life Sciences – SGGW.

**Tab. 3.** Locus of control among third-year Management students of SGH, PW and SGGW. Descriptive statistics

University name	Mean (Arithmetic Average)	SD	N
SGH	37,23	4,47	137
PW	36,18	4,70	134
SGGW	29,76	3,65	135

Range [22÷44] Total N=406

Source: author’s research.



**Tab. 4.** Locus of control among third-year Management students of SGH, PW and SGGW.  
Post hoc pair-wise comparisons

Locus of control (I)	Locus of control (J)	Difference between means (I - J)	Significance
SGH	SGGW	7,470*	0,000
	PW	1,054	0,132
PW	SGGW	6,416*	0,000

\* correlation is significant at the 0.001 level (two-tailed)

Source: author's research.

The presented results suggest the possibility of the correlation of both analyzed variables: readiness to take risks and locus of control.

Correlation results between these variables were presented in Table 5.

**Tab. 5.** Pearson's correlation coefficient: readiness to take risk and locus of control among third-year Management students of SGH, PW and SGGW

University name	Pearson's <i>r</i>	Significance	N
SGH	0,62*	0,000	137
PW	0,58**	0,000	134
SGGW	0,53*	0,000	135

\*\* correlation is significant at the 0.01 level (two-tailed) Total N=406

\* correlation is significant at the 0.05 level (two-tailed)

Source: author's research.

The obtained results indicate strong positive correlation between readiness to take risk and locus of control. – The more internal locus of control the higher is the level of readiness to take risk.

It has also been established that need for social approval had not distorted the responses of the respondents. The correlation coefficient of the KAS questionnaire result with the items of implemented techniques varies from 0.02 to 0.11 (criterion Pearson's  $r < 0.3$  is fulfilled).

#### 4. Discussion

The finding has shown significant statistical differences in the level of risk readiness between students of SGH Warsaw School of Economics, Warsaw University

of Technology and Warsaw University of Life Sciences – SGGW. This supports Hypothesis 1 presented by the author. The readiness to take risks, i.e. the readiness to take bold actions and allocate financial resources to projects with a high probability of failure – is significantly higher among third-year students of Management at the Warsaw School of Economics and Warsaw University of Technology than among third-year students of Management at the Warsaw University of Life Sciences. That result can be explained by a higher intensity of the internal locus of control – that is, a stronger belief in the possibility of one's influence on the events – among third year management students of SGH Warsaw School of Economics and Warsaw University of Technology than among the students of Warsaw University of Life Sciences – SGGW. Students of the Warsaw School of Economics and Warsaw University of Technology show greater courage in taking action in conditions of uncertainty – they seem to feel that they control the outcomes of the events of their lives.

The results also demonstrate significant statistical differences in locus of control scores among management of the three surveyed universities, that is consistent with Hypothesis 2.

The findings support Hypothesis 3, which predicted a positive relationship between internal locus of control and readiness to take risk. Such a correlation was suggested by Miller, de Vries and Toulouse [2017]. Turowska, in turn, has shown the importance of perceived locus of control in making difficult decisions, noting that the students of the Warsaw School of Economics and Warsaw University of Technology manifest a higher level of conviction about their own influence on the course of events than the students of the Warsaw University of Life Sciences [Turowska, 2013].

This may result both from the differences in curricula and environmental conditions predisposing to greater vigor or caution in taking up business activities.

## **Conclusions and implications**

Taking business risk is a sine qua non condition of the thriving business organization management.

The findings of the presented study make contribution to theory and practice.

First – theoretical implication is supporting the hypothesis which documents significant positive correlation between internal locus of control and readiness to take business risk.

Second – practical suggestion is that there is a need to develop readiness to take business risk among students of the Warsaw University of Life Sciences who manifest low level of this variable. Developing readiness to take risk, in turn, can be achieved by training SGGW students in raising the level of self-esteem and need for

achievement – personality dispositions positively correlated with internal locus of control (internal source of risk generation).

## ORCID iD

Anna Turowska: <https://orcid.org/0000-0002-9115-9812>

## References

1. Adamiecki K. (1938), *On the essence of a scientific organization. A collection of works in the field of organization and management science*, Warsaw University of Technology Publishing.
2. Benz M., Chatterjee D. (2020), *Calculated risk? A cybersecurity evaluation tool for SMEs*, *Business Horizons*, 63(4), pp. 531-540.
3. Drucker P. F. (2003), *The Practise of Management*, Warszawa, MT Biznes.
4. Drydak N. (2022), Artificial Intelligence and Reduced SMEs' Business Risks. *A Dynamic Capabilities Analysis During the COVID-19. Pandemic*, *Information Systems Frontiers*, <https://doi.org/10.1007/s10796-022-10249-6>.
5. Dvorský J., Petráková Z., Fialová V. (2020), *Perception of Business Risks by Entrepreneurs According to Experience with the Business Failure*, *International Journal of Entrepreneurial Knowledge* 8 (1), pp. 76-88. doi: 10.37335/ijek.v8i1.104.
6. El-Baz J., Ruel S. (2021), *Can supply chain risk management practices mitigate the disruption impacts on supply chains' resilience and robustness? Evidence from an empirical survey in a COVID-19 outbreak era*, *International Journal of Production Economics*, 233.
7. Fiedler, T., Pitman, A.J., Mackenzie, K. et al. (2021), *Business risk and the emergence of climate analytics*, *Nature Climate Change*, 11, pp. 87-94. <https://doi.org/10.1038/s41558-020-00984-6>.
8. Hauswald E. (1926), *Industry: foundations, development, employee selection, psychotechnics, production efficiency, productivism, prosperity, scientific organization*, Lviv, Gubrynowicz & Son Publishing House.
9. Hughes M., Morgan R.E. (2007), *Deconstructing the relationship between entrepreneurial orientation and business performance at the embryonic stage of firm growth*, *Industrial Marketing Management*, 36.
10. Keh H.T., Foo M.D., Lim B.C. (2002), *Opportunity evaluation under risky condition: The cognitive processes of entrepreneurs*, *Entrepreneurship Theory and Practice*, 2.

11. Machokoto M., Araneke G., Nyangara D. (2021), *Financial conservatism, firm value and international business risk: Evidence from emerging economies around the global financial crisis*, Finance & Economics, <https://doi.org/10.1002/ijfe.2032>.
12. McMaster M., Charlie N., Christeen T., Belanda X., Cheng C., Ping Q. (2020), *Risk Management: Rethinking Fashion Supply Chain Management for Multinational Corporations in Light of the COVID-19 Outbreak*, Journal of Risk Financial Management, 13, <https://doi.org/10.3390/jrfm13080173>.
13. Miller D., de Vries M.F.R., Toulouse J-M. (2017), *Top Executive Locus of Control and Its Relationship to Strategy-Making, Structure, and Environment*, Academy of Management Journal, 25.
14. Moczydłowska J.M., Szydło J. (2016), *Uwarunkowania rozwoju przedsiębiorczości w ocenie studentów polskich i ukraińskich – analiza porównawcza*, Przedsiębiorczość i Zarządzanie, 17, s. 209-222.
15. Mosteanu N.R. (2020). *Artificial Intelligence and Cyber Security – A Shield against Cyberattack as a Risk Business Management Tool – Case of European Countries*, Access to Success, 21(175), pp. 148-156.
16. Rotter J.B. (1954), *Social learning and clinical psychology*, New York, Prentice-Hall.
17. Rotter J.B. (1966), *Internal-External Scale*, adopted by J. Karyłowski, *Psychological Test Laboratory*, Faculty of Psychology, University of Warsaw.
18. Turowska A., (2013), *Coping with stress at the threshold of self-dependence among tertiary education graduates*, Doctoral dissertation, Faculty of Psychology, University of Warsaw.
19. Wiklund J., Sheperd D. (2003), *Knowledge-based resources, entrepreneurial orientation, and the performance of small and medium-sized businesses*, Strategic Management Journal, 13.
20. Wilczyńska J.T., Drwal Ł.R. (1980), *Kwestionariusz Aprobaty Społecznej*, The Review of Psychology, 23, s. 569-583.
21. Yang B. (2022), *Prevention of Business Risks of Internet Information Security Platforms Based on Blockchain Technology*, Computational Intelligence and Neuroscience, 7671810, <https://doi.org/10.1155/2022/7671810>.
22. Zahra S. (1991), *Predictors and financial outcomes of corporate entrepreneurship: An exploratory study*, Journal of Business Venturing, 4.

# **Gotowość do podejmowania ryzyka przez studentów zarządzania**

## **Streszczenie**

Celem zaprezentowanych badań jest przedstawienie poziomu gotowości do podejmowania ryzyka biznesowego przez studentów Zarządzania: w Szkole Głównej Handlowej, Politechnice Warszawskiej oraz w Szkole Głównej Gospodarstwa Wiejskiego. Zbadano 406 osób – studentów ostatniego roku studiów licencjackich. Istnieją istotne różnice statystyczne między Szkołą Główną Gospodarstwa Wiejskiego a dwiema pozostałymi uczelniami – Szkołą Główną Handlową i Politechniką Warszawską. Wyższy poziom gotowości do podejmowania ryzyka biznesowego zauważa się u studentów Szkoły Głównej Handlowej oraz Politechniki Warszawskiej. Nasuwa się potrzeba rozwijania tej predyspozycji u studentów Szkoły Głównej Gospodarstwa Wiejskiego, u których poziom tej zmiennej jest niski. Zgodnie z literaturą przedmiotu dobrze rozwijająca się organizacja biznesowa nie może funkcjonować bez podejmowania ryzyka biznesowego. Niższy poziom gotowości do podejmowania ryzyka wiąże się z poczuciem zewnętrznego umiejscowienia kontroli u studentów Szkoły Głównej Gospodarstwa Wiejskiego.

## **Słowa kluczowe**

gotowość do podejmowania ryzyka biznesowego, studenci Zarządzania, poczucie umiejscowienia kontroli