

# Psychological Ownership: A Human Factor to Consider for the Success of Technology Entrepreneurial Activities

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**Abstract** - The concept of psychological ownership where someone can identify something as their own is part of every person's life. Psychological ownership is important because someone that own something take responsibility for its wellbeing. Currently there is no mechanism to measure psychological ownership of equipment within the context of small entrepreneurial business in South Africa. In this MOSAIC-2B project case study cinema-in-a-backpack equipment was given to entrepreneurs to empower them to start their own successful businesses screening multi-media content in rural South Africa. This research aimed to identify whether or not individuals developed psychological ownership towards the cinema equipment and what the possible effects of having psychological ownership could be. This study resulted in the development of a measuring tool for psychological ownership in the context of small entrepreneurial businesses in South Africa. Psychological ownership can give valuable insight into how entrepreneurs run their businesses in South Africa and this study also established that individuals that perceive themselves as successful has a higher indication of psychological ownership.

**Keywords** - Psychological ownership, MOSAIC-2B, entrepreneurs, cinema equipment, success, mobile cinemas

## I. INTRODUCTION

According to Pierce et al. [1] psychological ownership is "a state of mind" where someone feels that something or some object is "Mine!" Therefore, at the heart of psychological ownership is the state of mind that something is your possession and that it belongs to you. Formal or physical ownership is the general acknowledgement through some structure or agreement that something (an object, work, task, responsibility, etc.) belongs to someone. Distinguishing psychological ownership from formal or physical ownership is the sense not only that an object, for instance, belongs to me because someone gave it to me or I bought it myself, but that it is so much mine that it has become a part of me.

In South Africa we are faced with a very high unemployment rate that can only be rectified by creating new jobs, which includes starting more businesses. However, entrepreneurs that start new businesses very often fail before they have had a chance to expand and create more jobs for unemployed people. Psychological

ownership, or rather the lack thereof towards not only the work someone is doing but also the equipment and money they are working with has been identified as a possible reason for failures in these businesses.

The aim of this research was to explore what the possible indicators of psychological ownership are and whether the existence of psychological ownership in small entrepreneurial businesses correlates with its success. This research thus explored the concept of psychological ownership, how it is defined, how it is represented and whether the existence of psychological ownership or lack thereof might correlate with the success of the business. The research process was conducted by focussing on a small group of entrepreneurs that were given movie-viewing equipment ('Cinema-in-a-backpack' that includes a projector, speakers, a battery and a tablet) to start small businesses focusing on mobile cinemas in rural areas.

Looking specifically at the "Cinema-in-a-backpack" of the MOSAIC-2B project and the group of entrepreneurs that formed a part of this project to show movies in rural areas this research study investigated whether each entrepreneur exhibited psychological ownership of the work he was doing and of the equipment he was using. Furthermore the study investigated whether the existence of psychological ownership had a correlation with the success of these businesses.

In this paper we first discuss the concept of psychological ownership in section 2, followed by the research process in section 3. The results are from the research are presented in section 4 with discussions and conclusions in section 5.

## II. PSYCHOLOGICAL OWNERSHIP

Although ownership in itself is the act of possessing something, "psychological ownership is a state of mind [1], which in turn implies that you don't actually have to possess something in order to have psychological ownership thereof.

According to studies done by Wilpert, Parker, Etzioni and Pierce [6] psychological ownership can be identified through the following characteristics:

- The emotions experienced when an object is seen as "Mine!" This feeling that something is my

possession psychologically ties a person to that object or target.

- When psychological ownership is present there will be a relationship between a person and the target / object (material or immaterial in nature) of the ownership. In this relationship the individual can have such a close connection to the object that the object becomes a part of that person's identity ("There goes Renny Redsocks!")
- The state of psychological ownership is complex and highly emotional. This feeling of ownership can produce pleasure and feelings of competence. The existence of psychological ownership can also be seen clearly when another person takes / steals that object that someone has taken psychological ownership of and claims it "as their own".

In a study by Belk [2] the theory was developed that certain experiences can lead to developing feelings of psychological ownership. This theory was expanded by a study completed by Pierce [1] where three key experiences were identified that can directly be linked to the development of psychological ownership feelings, these three experiences are:

- Having control over the target or object of your ownership.
- Knowing the target of ownership very well.
- Investing a part of yourself in the target of ownership.

Using these three key experiences a model was developed by Moon & Sanders [3] that explains how psychological ownership develops. This model was called the "Development of Feelings of Ownership Model (DFOM)" [3] and is graphically depicted in Figure 1. The following are illustrated in Figure 1:

- An individual has reasons for possessing an object ("Need for place, Self-identity, Efficacy") that leads that individual to develop feelings of ownership towards that object.
- The individual undergoes the earlier mentioned three key experiences of ownership.
- This then leads to the desire being fulfilled and the feelings of ownership towards the target keeps growing.
- The 'feeling' of ownership can ultimately lead to the individual changing their behaviour and attitude where the target of the ownership is concerned.

The concepts of self-identity, self-efficacy and effectance, self-determination, belongingness and accountability are discussed in more detail below.

- Previous studies have suggested that when an individual uses his ownership of a target to describe himself it could be an indication of psychological ownership, thus this ownership is a part of your personal identity and forms a part of how you would describe yourself to others [1]. Self-identity is seen in the context of someone having a connection with a target of ownership and this target becomes a part of that person [4].
- Self-efficacy is a term used to describe the fact that an individual feels competent to complete a certain action successfully and the need to explore the environment is strongly related and motivated by the concept of effectance. Effectance is the need of an individual to interact with their environment and the motivation to explore the environment will remain until there are no new possibilities within their environment. [5] [6].
- Self-determination is the fact that individuals have the right to make their own choices and implement their own actions based on the choices made [7].
- Belongingness: Having a place to call home is one of the most basic human needs and is very closely related to the fact that everyone wants to belong somewhere, which is closely linked to psychological ownership. Developing feelings of ownership could be increased by not just having a place where you belong but also personalising that space and interacting with that environment that you feel you own [8] [5] [4].
- Accountability is the expectation that an individual will have to justify his actions or beliefs [9]. Accountability can be seen as an indicator of psychological ownership in one of the following two ways: the expectation that others will be held responsible for their actions and the expectation that you yourself will be held responsible for your own actions [5]. When discussing accountability it is important to take note that it is not the same as responsibility, whereas a responsibility can be assigned to an individual and accountability is about the individual accepting the assigned responsibility [4].

The first theory about the experiences of ownership in organisations was developed by Pierce, Kostova & Dirks [1]. In this study they explained the key experiences of psychological ownership in the context of organisations controlling the target, intimately knowing the target of ownership and investing yourself in a target of ownership.

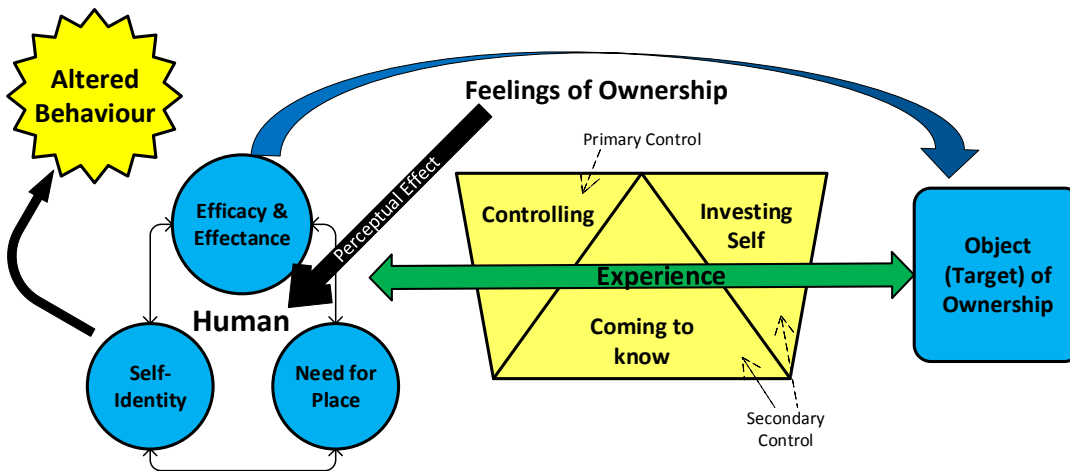


Figure 1: Development of Feelings of Ownership [3]

Some of the effects or consequences might also relate to the indicators of ownership because an effect of psychological ownership would in essence also indicate the existence of psychological ownership. Some of the effects of psychological ownership that have not yet been mentioned include:

- **Personal Sacrifice:** When individuals have developed feelings of psychological ownership feelings towards a target of ownership they are willing to personally take risks and make sacrifices in situations where the target of ownership is concerned.
- **Autonomy:** The term autonomy is very closely related to the term self-determination, which was discussed as a typical indicator of psychological ownership and it implies that an individual willingly and out of their own choice performs an action - which implies independence. Autonomy is an indication that an individual has control over a target which is associated with psychological ownership, this means that autonomy is an effect of psychological ownership [4].
- **Territoriality:** Territoriality is a consequence of psychological ownership and it is an “individual’s behavioural expression of the feeling of psychological ownership” [10]. Territorial behaviour will more likely and greatly be displayed when an individual has more feelings of psychological ownership towards a target, this implies that a greater feeling of psychological ownership will result in displaying more territorial behavior [10].
- **Attitude Changes:** Employees owning a part of an organisation (in the form of stocks) have been known to have better attitudes towards the organisation than employees who are non-owners. This leads to the examining of psychological ownership and how it affects employees’ attitudes. A study confirmed that psychological ownership could lead to changes in

the attitudes of the individuals exhibiting ownership towards the target of ownership [7].

- **Financial Performance:** Performing well financially because of feelings of psychological ownership was one of the topics studied by Wagner [7], but all studies however have mixed findings. This study however concluded that if individuals that have feelings of psychological ownership complete their work it usually increases their personal income, which would ultimately lead to the organisation performing better financially [7].
- **Negative Psychological Ownership:** Pierce, in his 2003 study on psychological ownership acknowledges the fact that psychological ownership might not always have positive consequences, especially when an individual becomes so possessive of a target of ownership that he doesn’t want to share it with anyone, the study refers to this as “The dark side of psychological ownership” [6]. One of the negative effects of psychological ownership is an employee working on a team project not wanting to share the object of ownership with members of their team, another example is when someone is separated from someone or something they have psychological ownership over (by for example a restraining order) it may lead to acts of sabotage or malice [6].

### III. RESEARCH DESIGN

As mentioned in the introduction, the aim of this research was to explore what the possible indicators of psychological ownership are and whether the existence of psychological ownership in small entrepreneurial businesses correlated with its success. The research process was conducted by focussing on a small group of entrepreneurs that were given movie-viewing equipment (‘Cinema-in-a-backpack’ which includes a projector, speakers, a battery and a tablet) to start mobile cinemas in rural areas.

During the research an interpretive philosophy was followed since psychological ownership is a topic that needs to be evaluated in a social setting. A qualitative study approach was followed where all the research questions were answered through qualitative data collection and analysis techniques.

The research strategy adopted for this study was a case study: the research focused on a specific instance or circumstance where psychological ownership could possibly occur. The Case Study was part of the MOSAIC-2B project, where the goal of MOSAIC-2B is defined 'to develop and test a new framework that uses cloud-based applications, innovative low-cost internet delivery mechanisms (delay tolerant networks and opportunistic communications) and affordable mobile technologies to unlock new mobile business opportunities, especially in rural villages' [11]. The focus was on the 13 small business entrepreneurs in South Africa working with movie viewing equipment that was provided to them in order to show movies to rural communities in South Africa. The research was conducted after the entrepreneurs had the equipment for several months and had the opportunity to show movies to members of their community. The research tested if the entrepreneurs developed feelings of psychological ownership towards the equipment they received to do a specific job and whether these feelings of psychological ownership led to them having a successful business.

Although research documents were used earlier in this study to answer some of the research questions in the literature review, the main data collection method used to answer the research questions about psychological ownership for small business entrepreneurs in South Africa was interviews. The reason for using interviews was that a lot of responses had to be gathered in a short amount of time and video recording the interviews would lead to the respondent being finished quicker than having to write down answers in a questionnaire.

This study used qualitative data analysis to analyse the data gathered from the interviews. All the interview questions were in a standard format so to do the data preparation the video recordings of the interviews were transcribed for later analysis.

#### IV. RESULTS

Applying the knowledge gathered from previous studies on psychological ownership interviews were conducted with the 13 entrepreneurs that were part of the MOSAIC-2B project – this project entailed that each individual would receive equipment to start their own mobile cinema. Interviews were conducted on the day that the project for the entrepreneurs ended but before they received the equipment to keep (rather than just to use it as part of the project).

This timeframe was ideal for the interviews because none of the entrepreneurs has physically received the

equipment as their own yet, therefore most indicators of ownership could be an indication of psychological ownership.

During the literature review 14 indicators were identified as typical indicators of psychological ownership and these are explained in Table 1.

Using these indicators of psychological ownership as a starting point, certain categories were identified and questions were formulated that were answered by the 13 individuals participating in the MOSAIC-2B project. After the interviews the answers for the questions were analysed and it became apparent that some of the indicators of psychological ownership can be adapted to fit this specific case. This led to the establishment of a list of indicators of psychological ownership specific to the case of using cinema equipment to show movies in rural communities. The indicators are summarized in Table 2.

While considering the different indicators of psychological ownership and the questions asked to the 13 individuals about the MOSAIC-2B project several observations were made. The first is that a possible psychological ownership score could be calculated for each respondent based on the answers they gave, and this score can also be used to find out if there is any correlation between psychological ownership and whether or not the business is successful or the individual perceived themselves as successful. The answers that the respondents gave under each indicator (specified in Table 2) were each given a score of 0, 1 or 2 where 0 implies that no level of psychological ownership took place. These scores were added up for each indicator and each indicator was given a weighting (out of 100) based on the research done in the literature study. These weighted scores for each indicator were then added up and converted to percentage for each respondent. The following is a representation of the final psychological ownership percentages for each respondent. In Figure 2 we indicate the respondents with the highest and lowest scores.

Lastly it was investigated whether an individual perceiving themselves as successful could possibly be because of psychological ownership feelings. To do this a scatter plot was drawn up (Figure 3) to investigate if a high psychological ownership score would also mean a high success score, and vice versa.

From Figure 3 it is evident that the 4 respondents with the highest psychological ownership score also had the highest success scores, but there are also respondents with high success scores and low psychological ownership scores as well as respondents with low success scores but high psychological ownership scores. This implies that it can't be said with absolute certainty that psychological ownership and perceived success are correlated. It can however still apply that perceived success is one of the important indicators / effects of psychological ownership.

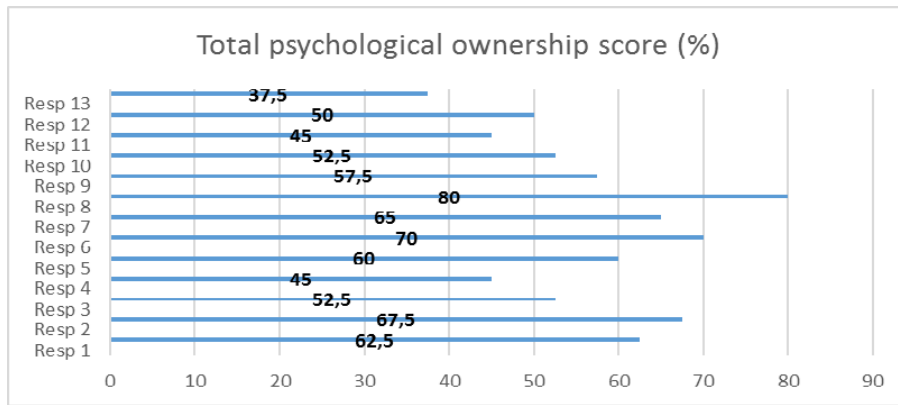


Figure 2: Total psychological ownership percentage

TABLE I. INITIAL LIST OF INDICATORS OF PSYCHOLOGICAL OWNERSHIP

1. Control	8. Being satisfied with the target of ownership and having intentions to keep using it
2. Knowledge and usage of the target of ownership	9. Forming a relational bond with the target of ownership
3. Linking the target of ownership with self-identity	10. Talking about the target of ownership and promoting it
4. Self-determination in the use of the target of ownership	11. Resisting competing products
5. Feeling a sense of belonging to the target of ownership	12. Willingness to personally sacrifice and take on risks regarding the target of ownership
6. Feeling responsible and accountable to the target of ownership	13. Exhibiting autonomy and territoriality towards the target of ownership
7. Exhibiting extra role behaviour in doing more than what is required with the target of ownership	14. Changes in attitude regarding the target of ownership and financial performance

TABLE II. INDICATORS OF PSYCHOLOGICAL OWNERSHIP

Indicator	Adaption
Self-identity	The respondents must refer to the MOSAIC-2B project or the cinema equipment when describing themselves or their most important possessions.
Belongingness	The respondents feel that the cinema equipment belongs to them without anyone else informing them of this fact or without them psychically owning the equipment at that point in time.
Self-efficacy and effectance	The respondents know the cinema equipment beyond what they were told about it, they did some independent studying to get to know the equipment and know it well enough to be able to detect a problem without getting help from someone else.
Self-determination	The respondents made their own decisions about how and when to use the cinema equipment and they did more than what was expected of them.
Accountability /Responsibility	The respondents took the responsibility to keep the equipment safe and in working order, they also took the responsibility when something went wrong or didn't work.
Attitude changes	The respondents' attitude towards the cinema equipment, movies or the movie industry have changed because of their personal experience with the equipment and showing movies.
Job satisfaction	The respondents are satisfied with the job of showing movies to the community and would continue doing this job.
Competitive resistance	The respondents were reluctant to give back the cinema equipment for similar equipment and they were reluctant to take another job if it meant that they had to stop showing movies to the community.
Success	The respondents perceived themselves as successful based on their own criteria of success.



Figure 3: Psychological ownership vs success

## V. CONCLUSIONS

The following contributions were made to the existing literature on psychological ownership:

- Specific indicators of psychological ownership were identified specific to the case of using the cinema equipment in the MOSAIC-2B project.
- Perceived success was identified as an additional indicator of psychological ownership
- A measuring framework was established that can be used to help identify the existence of psychological ownership in the specific context of the MOSAIC-2B project. However this framework can be used in other contexts if the questions and weightings were adapted to fit that specific situation.

Future research on the topic of psychological ownership can result in findings about the subject of psychological ownership in the context of information systems as well as more precise information on the topic of psychological ownership and perceived success.

The first recommendation for future research is using this research paper as starting point and investigating the linkages between psychological ownership and perceived success a bit further. This study can also focus on the concept of continued success, meaning that if an individual showed signs of having psychological ownership and perceive themselves successful, what then? Will this individual continue to be successful and is psychological ownership the key to making entrepreneurial businesses successful in South Africa?

The second recommendation for future research is also on the topic of psychological ownership but then shifting the focus to IT project and information systems adoption. This could investigate the fact that psychological ownership might have an effect on how clients adopt the information systems provided for them in IT projects, it could also investigate whether psychological ownership plays a role in the success or failure of IT projects.

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